Midwest Region
Natural Resources Conservation Service

COMPUTER AIDED DESIGN AND DRAFTING (CADD) STANDARDS AND GUIDELINES

10/24/2001

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Preface

The purpose of this document is to distribute copies of the Midwest Region's guidelines on CADD drafting.

The document is divided into three parts. Part I sets out the standards the NRCS Midwest Region has for drawings and sets of drawings. Part II outlines implementing the standards with the current software and hardware employed throughout the Midwest Region. The appendices contain guidelines and references detailing these standards.

NRCS documents and presents Engineering designs to the owner and contractor in several forms. One of the forms used is the construction drawing. The drawing provides details on location, shape, and size of the project that are more readily documented through this format than by other means.

Drawings express to the landowner, contractor, and general public the quality of engineering services being provided by NRCS. Therefore, to provide the best image possible, drawings are to be clear, legible, accurate, and complete. They also must display quality in organization and format.

Additions/Revisions

This standard is intended to be neither static nor all inclusive and thus will be updated and enhanced as appropriate. Suggestions for improvements are strongly encouraged so that subsequent updates will reflect the input and needs of CADD users within the Midwest Region.

Recommendations or suggested additions should be sent through the State Conservation Engineer to be forwarded to the Regional CADD Team as appropriate.

PART I – Midwest Region Standardization

Plans, Drawings and Drawing Sets

Engineering drawings by NRCS shall be uniform in format to facilitate exchange of a drawing's basic content. The basic content consists of the sheet size, margins, scale, line thickness, text size, layers and symbols. Drawings are also to include a date and time of last known changes as well as a record of the drafter and anyone making changes to the original documents.

Views, tables, details, and notes on drawings will be drawn in accordance with standard NRCS drafting conventions. The most frequent arrangements consist of orthographic projections for structural elements and, for earthwork, views of the plan, profile, and cross sections. Geologic mapping conventions are to be used for geological work. Symbols and abbreviations used are identified.

Sufficient views, dimensions, and symbols for the various kinds of construction materials are included to describe the work in detail. Terminology in descriptions is to be consistent with that contained in the specifications; therefore, the drafter as well as the engineer must be very familiar with the specifications.

Standard details are used to the maximum extent possible to provide efficiency, but not to the extent of resulting in a poor quality drawing.

To ensure uniformity, make modifications to a drawing using the original line thickness, line styles, text fonts, text sizes, scale, etc.

Standards of drafting within the industry are used to the maximum extent possible. Some of the available reference standards are:

(1) The American Concrete Institute (ACI) Detailing Manual.
This consists of three parts (1) ACI Standard: Details and Detailing of Concrete Reinforcement (ACI 315), (2) ACI Standard: Manual of Engineering and Placing Drawings for Reinforced Concrete Structures (ACI 315R), and (3) supporting reference data.

(2) The American Institute of Steel Construction(AISC) Manual of Steel Construction.
This includes steel member shape designations, dimensions, and properties. Included is a brief discussion on the content of drawings and the responsibility of its owner. Standard welding symbols are displayed.

(3) The American National Standards for drafting practices (ANSI Y14.1 through Y14.5) published by the American Society of Mechanical Engineers. §54l.0l

Media and Technique

Prepare drawings on the media appropriate to the purpose. For most jobs paper is appropriate. However, a more durable medium, such as vellum or Mylar, should be used for standard details and standard detail drawings requiring repetitive copying and for drawings retained for several years.

The preferred method of storing drawings is the compact disc or other electronic media of permanent types, giving care to update the media as technology changes.

All lines and letters must be clear, sharp, and dense to ensure clear copies of both contact prints and one-half scale reductions. Letters are to be single stroke types. Lettering may be written freehand, by use of lettering guides, typed, or by computer-driven printers or plotters.

Sheet Size

Prepare drawings on sheet sizes appropriate to provide for a neat and uncluttered appearance. For small jobs involving a limited land area, limited number of features and details a small sheet size (8.5 inch by 11 inch) is adequate. Paper forms are provided in electronic format by NRCS with a prepared border, title block, and background guidelines (i.e., profile and cross section) in a size of 11 inches by 17 inches. For larger projects involving extensive land area and a large number of features and details, sheet sizes in the range of 22 inches by 34 inches to 24 inches by 36 inches should be used. Electronic forms are provided by NRCS with a prepared border, title block, and background guidelines (i.e., grid, profile, and cross section) in a size of 22 inches by 34 inches. The standard NRCS sheet sizes and their respective designations A, B, and D are shown in *Appendix I*.

Title Blocks

Each sheet in a set of construction drawings is to have a title block to identify the originator and contents of the drawing. The format and arrangement of a title block on a drawing will vary according to the origin of the design. The title block indicates the agency or organization preparing the design and, in turn, drafting the drawing. Use the NRCS title blocks shown in *Appendix I* on the drawings drafted by NRCS, based on an NRCS design. The title block normally used by a consulting firm or sponsoring agency should be placed on a drawing prepared by that firm or organization when they also have done the design. The number and arrangement of supplementary approval blocks will vary according to the local and state requirements. Electronically generated title blocks distributed by the Midwest Region CADD Team are recommended for use.

Cover Sheet

Each set of construction drawings consisting of more than five sheets is to have a cover sheet showing the name and location of the project; the names of the sponsoring agencies, or owners; an index of the drawings; space for approval signatures; and, if appropriate, the seal of the engineer. If space permits, it may also include the location map and such general notes and design data as may apply to the drawings.

Geographical Reference

Construction drawings for all dams that are significant for reasons of public safety and major engineering works are to contain structure reference lines and right-of-way limits referenced to fixed and readily identifiable geographical points. Smaller jobs are to include at least a simple location map containing readily identifiable landmarks. At a minimum, the project drawing set should include county, township name, section number(s) and a graphic showing the relative location within the section(s).

Orientation of Views

The drafter will orient the drawing views in the following manner:

(a) Draw all maps (i.e., location maps) with the north toward the top of the sheet. If this orientation is not feasible, draw the map with north toward the left. Provide a north arrow on all maps and plan views.

(b) Draw layout drawings of reservoirs and spillways so that the direction of stream flow is from left to right or bottom to top of the sheet. Place properly labeled arrows to indicate the direction of stream flow and North direction. Orient layouts of animal waste, wetlands and other projects of non-directional water flow with North to the top or left side of the sheet.

(c) Draw elevations, sections, and plan views for earth dams, reservoirs, and spillways as follows:
(1) Draw sections, representing surfaces essentially parallel to the direction of the stream flow, so that the upstream end of the sections are on the left-hand side, and flow is from left to right. When using a design software that depends on centerline stationing, orient cross sections created from the centerline alignment as viewed by standing at the beginning of the alignment and facing the direction of increasing stations.
(2) Draw plan views so that the stream flow is toward the right side or top of the sheet.

(3) Draw elevations and sections representing surfaces essentially normal to stream flow when viewed from upstream (observer looking downstream). If such an orientation violates the purpose of the section, change the aspect of the section to fit the need and indicate the direction of the view appropriately.

(d) Except for drainage structures, station structure reference lines parallel to the direction of stream flow so that the station numbers increase in a downstream direction. Reference lines for drainage structures may be stationed so that the station numbers increase in an upstream direction if the drainage channel is similarly stationed. Station structure reference lines normal to the direction of stream flow from left to right as viewed in the direction of increasing stations.

(e) Station flood and irrigation channels so the station numbers increase in the downstream direction. If drainage channels form a part of the multiple-purpose complex of channels, they are to be stationed in the same way as flood and irrigation channels; otherwise, they may be stationed in an upstream direction. For all channels, profiles are to be drawn so that the stations increase from left to right and cross sections are to be drawn as though viewed in the direction of increasing stations.

(f) Multiple cross sections on a single sheet will be arranged so that the stations will increase from the bottom to the top of the page beginning in the left most column then continuing to the right columns. (Example: A sheet with four cross sections; 0+00, 1+00, 2+00 and 3+00 will be arranged as follows: 0+00 will be in the lower left corner, 1+00 will be in the upper left corner, 2+00 will be in the lower right corner and 3+00 will be in the upper right corner.

Detailing

Detail structural drawings to conform to ACI 315 and the AISC Manual of Steel Construction. Structural details for concrete structures may be shown on the layout drawings if the structure has a simple system of reinforcing and the structural details and layout dimensions of the structure and appurtenances can be shown on the same drawings without confusion. Prepare the drawings so that all dimensions and sizes of materials and appurtenances may be determined without reference to the specifications. Construction drawings will include structural details as described in ACI 315 Part B.

Scale

Carefully select scales of drawings to insure clarity of details. Consider the manner of reproducing copies in setting the scales used. The minimum scale of structural layout sheets will be ¼-inch equals 1 foot. Except for simple reinforcing systems, the minimum scale for structural detail is 3/8-inch equals 1 foot. If possible, use a minimum scale of ½-inch equals 1 foot for drawings that may be copied and or reduced. Use a graphic scale for drawings that may be copied and/or reduced. When drawings lacking graphic scales may be copied and/or reduced, each reduced sheet must bear a prominent warning note that the drawing is of reduced size and the indicated scales are not accurate. Care must be taken to insure that such notes are not copied on contact prints of the original drawing.

Notes

Limit notes on drawings to those required for complete and accurate interpretation of the drawings and those required to supplement the contract specifications. Except for standard notes (such as general notes, structural notes, and design data) that generally apply to all drawings within a set, place each note on the sheet to which it directly applies.

Geologic Boring Placement

Place geologic boring information on cross sections. Include the following data; boring number, station and offset of boring, waterline depth and date of waterline. Indicate the soil classification for various depths of the boring from a list of soil classifications provided by the Geologist.

Drawings

Standard sheet size will be 22 inches by 34 inches with a working area within a border of 20.7 inches by 30.0 inches. Use vertical title blocks for D size sheets as shown in Appendix I.

As an alternative, use sheets 11 inches x 17 inches. Draft the sheets so that when they are plotted at a 2:1 scale, they are identical to ones drawn on sheets 22 inches by 34 inches.

Use text and dimension styles designed for drawings 11 inches by 17 inches on sheets 8 ½ inches by 11 inches.

PART II –Implementing Standardization

General

This Midwest Region CADD policy accommodates the use of AutoCAD and other engineering design software in drafting. The final drawing products readily reflect the style of current drawing practices.

Use AutoCAD and engineering software to incorporate the standards previously set forth with the use of templates, prototypes and libraries. The drafter should use the available tools to standardize sheet size, titles and borders, text, dimensions, layers, layouts, line types and several other settings.

Media and Technique

Drafters will maintain drawings for each project in a separate folder. A system for creating backups will be implemented and checked periodically to ensure proper operation. Only one official copy of a project will be maintained. If a project is transferred for design purposes between offices compress the directory for transfer and store a copy of the compressed file in a safe location. Change the original project description to reflect the unofficial status. Accomplish transfers by electronic transfer across the internet or by copying files to a media and sending them through the mail or other delivery method. Keep all files pertaining to a project in the official folder when transferring between offices.

Sheet Size

A folder *\My Projects\Borders and Title Blocks* directory contain drawings of the approved sheets with borders and title blocks. These drawings may be inserted into the project drawings as blocks. They are sized for placing in paper space on the layouts as needed. The sizes are 8 ½ inches by 11 inches, 11 inches by 17 inches and 22 inches by 34 inches.

Cover Sheets

The Design Center feature of AutoCAD allows for dragging and dropping layouts from one drawing to another. Drawings are maintained in the *\My Projects\Design Center* directory with drawing components available (i.e. layers, symbols, layouts, etc.). These drawings will have some cover sheet layouts that can be dragged and dropped into the current project. Designers will be able to customize these drawings to fit their area and projects. The customized files should be renamed to reflect the changes, as the original Design Center drawings will be updated periodically. Future updates will overwrite the originals.

Geographical Reference

        The Design Center drawings contain location and information layouts that can be used for geographical reference.

Orientation of Views

        Current software allows for varying orientation of views, without changing coordinate systems. Maintain the original coordinate system throughout the project if possible. When translating coordinate systems to other projections, create records explaining how the translations were completed. The records of the translation will become part of the design folder.

        Two tools for aligning views on layouts within AutoCAD are DVIEW-TWist and MVSETUP. Eagle Point has a similar command in the Tools menu, ROTVIEW. These tools allow a different layout view orientation than the model view without affecting the original coordinate system.

        Indicate the direction of stream flow on all sections and profiles as needed.

Detailing

        (Reserved for future use.)

Scale

        The drafter can scale layout view ports in AutoCAD to any chosen scale. Lock the view port display once the scale is set and positioned appropriately.

Notes

        The *My Projects\OLE* directory will contain several suggested construction notes documents. They can be copied to a separate location, preferably the project directory, and edited for linking or embedding into the AutoCAD drawing. The notes are included as *Appendix II* to this document. A font style of Arial most closely matches the text styles set as standard for the Midwest Region.

        The notes can be sized to match the text style of the current drawing as the OLE object is inserted into the drawing. Notes will be placed in paper space on the layout tabs.

Geologic Boring Placement

Geologic borings can be graphically indicated on cross sections by plotting sub-surfaces created in the design software using the soil borings routine. Each soil boring should be indicated at the appropriate offset. The boring locations will be indicated on the plan view with the appropriate symbol.

Drawings

Drawing guidelines are as follows:

- **Bar Scales.** Bar scales will be used in plan views and on maps. The scales are available as blocks in the symbols library.
- **Bench Marks.** Bench mark descriptions will be shown. A block from the symbols library or embedded OLE table may be used. Corresponding symbols will be placed on the plan view and identified appropriately.
- **Legend Sheets.** If used, legend sheets may contain tables of quantities, stage-storage and other hydraulic data. A symbols library ensures consistency among projects.
- **Sheet Specific Legends.** If used, legends will reference all symbols that are included on that sheet.
- **Libraries.** Libraries may contain items such as; scales, titles, notes, arrows, bench marks, lab tests, embankment tables.
- **Symbols.** Draw any symbols produced to be shared, so that they are fully compatible with the appropriate drawing size in mind and named accordingly, i.e. *dsymbolname.dwg* for 22-inch by-34 inch drawings, or *bsymbolname.dwg* for 11-inch by-17 inch drawings. Symbol text, line and dimension styles are to match those in the drawing. Symbols will be drawn on appropriate layers following the adopted layer naming conventions. The insertion point will be 0,0,0. Symbol drawings will be purged of all extraneous text styles, dimension styles, blocks, line types, layers, multi-line styles, shapes and plot styles prior to distribution. *Appendix III* contains samples of the above mentioned symbols
- **Line Types.** Line types for the following items are provided and will be used: existing ground surface, bank lines in profile, baseline, centerline, stations, excavation, fill, existing banks, contour lines, work limits, fences, water lines and the stream.
- **Layers.** Layers should be used to optimize efficiency and organization of the drawing. Consideration should be given to a naming convention that will allow for easy filtering. For example, the field code surveying layer names all begin with V.Fcod. This way all the field code layers are grouped together in the layer manager dialog box.
- **Layouts.** Layouts can be used for multiple drawings within a project. All layouts will be named with an identifying name, i.e. Plan View, General Layout, Profile, etc. Avoid using drawings that require subsequent drafters to

manipulate layers to plot varying versions of a drawing. Use layouts to accomplish the same end.

- **Line Weights.** Line weights will adhere to the chart included as *Appendix IV* to this document.
- **Colors.** Colors are a personal preference option, and are not associated with any particular line weight. It is suggested that color be set by layer.
- **Text Styles.** A chart with text style settings for AutoCAD are included as *Appendix V.*
- **Dimension Styles.** All dimensions settings are preset in the templates and prototype drawings. When dimensioning in paper space, use the 001xb_Notes_Dimensions or 001xd_Notes_Dimensions styles after setting the Measurement Scale on the Primary Units tab of the Style Override dialog box to the appropriate scale for the active viewport. When dimensioning in model space, use the style appropriate for the drawing scale. Dimension settings are shown in *Appendix VI*.
- **Date-time Stamp.** If used, a date time entry in the title block of all drawings will be manually edited to reflect the date and time of the most recent changes made to each drawing. The date and time may be unique to each layout. When any changes are made to a drawing file the date and time attribute of the file must be updated manually by doing a File – Save as command. A quick save will not necessarily update the file's date time attribute.

Directory Configurations

Following is a diagram suggesting a directory configuration. By using this configuration, updates to templates, symbols, borders and title blocks, and standard drawings and details will be easily accomplished. Take care to protect any changes made to drawings within these directories. Create additional directories to store your personal changes so they will not be over written by future updates.

\My Projects
    \My Projects\(Your directory structure)
        (These directories will contain sub-directories for each project. Each Eagle Point project must be stored in a separate directory.)
    \My Projects\Borders and Title Blocks
    \My Projects\Design Center
    \My Projects\OLE
        (This directory is for storage of documents and other files that can be linked to or embedded into drawings. Linked files must be transferred with the project directory.)
    \My Projects\Standard Drawings
        (This directory is for storing standard drawings. Any changes to the standard drawings will require checking and approval by the proper approval authority.)
    \My Projects\Symbols and Blocks
    \My Projects\Templates

Templates

Prototype drawings and templates will be stored in the *\My Projects\Templates* directory. To set this option in AutoCAD open Tools-Options menu and set the Drawing Template File Location on the Files tab. Drawings and templates in this directory are subject to future updates. Store any personalized files in this directory in a personal sub-directory. Line, text and dimension styles are part of the templates and prototype drawings. Templates and prototypes are available for the three standard sheet sizes A, B and D. The appendices show all line, text and dimension styles included in these templates.

AutoCAD Design Center

A feature of AutoCAD is the Design Center. To facilitate using this feature, a directory, *\My Projects\Design Center* is included in the CADD directory configuration. CADD users can store completed drawings in this directory to use for future drawings. Use of the Design Center will minimize the need for large cluttered prototype drawings and templates.

The Design Center is a tool for transferring previously created blocks, dimension styles, layers, layouts, line types, text styles and x-refs into a new drawing.

Sample drawings will be included in the *Design Center* directory for 11-inch by 17-inch drawings and 22-inch by 34-inch drawings. Items for 11" x 17" drawings will also apply to 8.5" x 11" drawings.

Appendix I – Standard Sheet Sizes
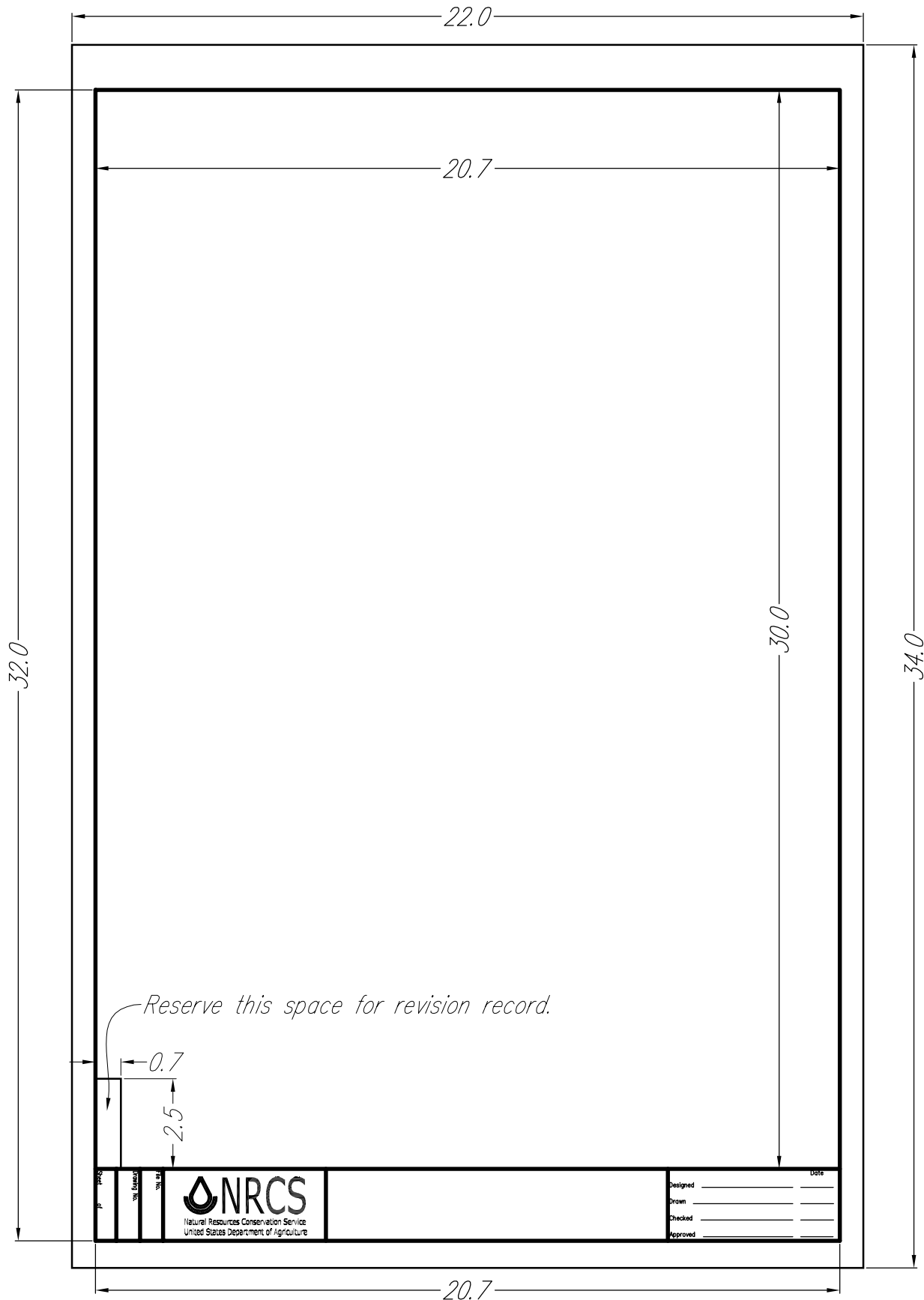
Appendix I Figure 1. Standard size for 22" x 34" media.

Appendix I – Standard Sheet Sizes
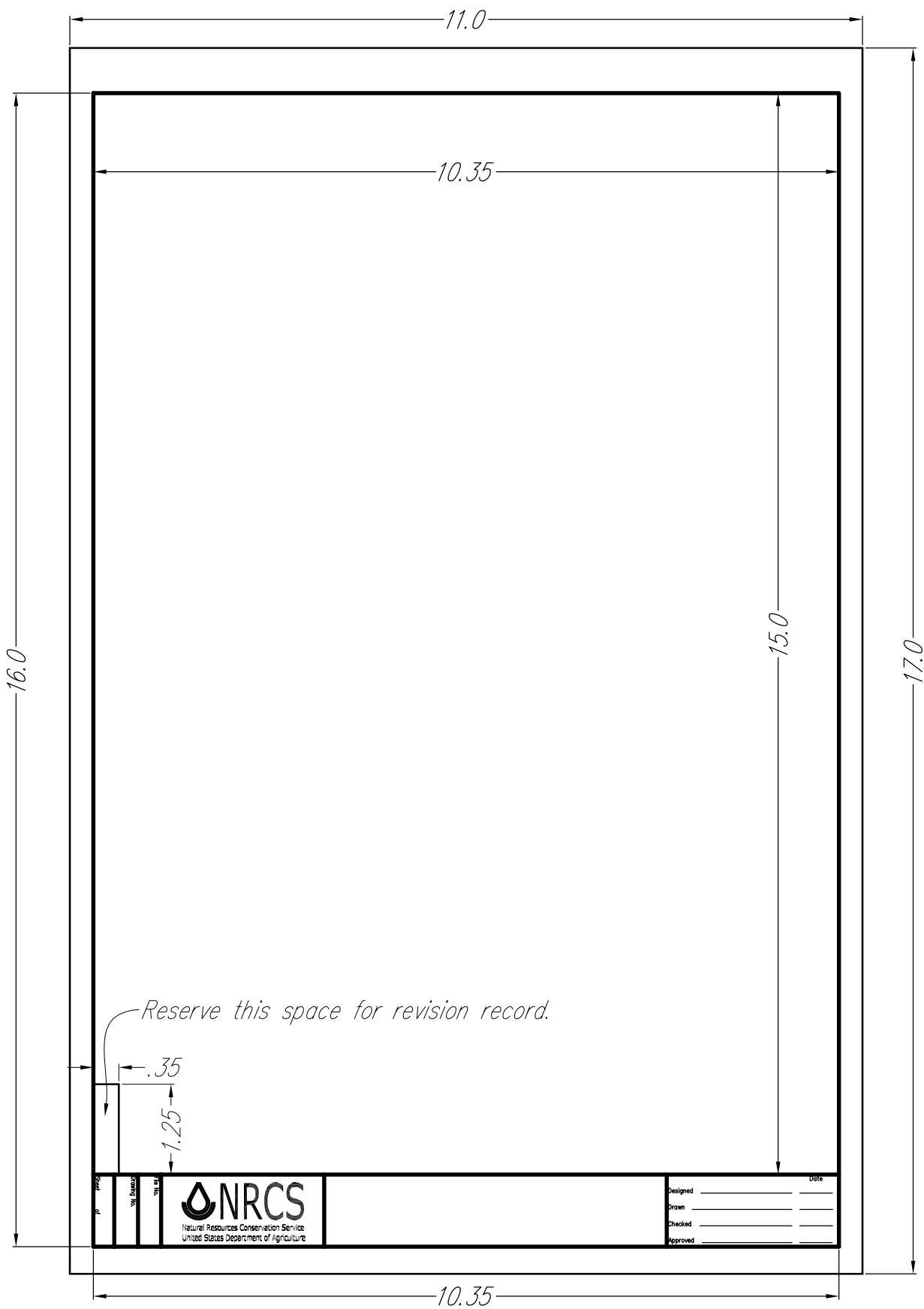
Appendix I Figure 2. Standard size for 11" x 17" media.

**Revision Block
Detail**

REVISIONS

DATE	APPROVED	TITLE

Do Not Use
Revision Block

0.7

2.5

Title Block Detail

SHEET TITLE
Sub–Title
Page 1 of ?

(Watershed Name and Project)

Iowa

	Date
Designed *(Designers Name)*	*(date)*
Drawn *(Drafters Name)*	*(date)*
Checked *(Checkers Name)*	*(date)*
Approved	

NRCS
Natural Resources Conservation Service
United States Department of Agriculture

File No.

Drawing No.

Drawing revision date/time group.

00/00/00 00:00
Sheet   of

4.8

9.5

4.5

0.6

0.7

0.6

2.0

Appendix I Figure 3. Standard title block for 22" x 34" media.

Appendix I – Standard Sheet Sizes
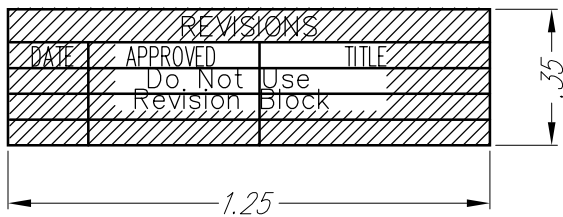
Revision Block Detail

REVISIONS

DATE	APPROVED	TITLE

Do Not Use
Revision Block

.35

1.25

Title Block Detail

Designed _(Designers Name)_ Date _(date)_
Drawn _(Drafters Name)_ _(date)_
Checked _(Checkers Name)_ _(date)_
Approved

Iowa

SHEET TITLE
Sub-Title
Page 1 of ?

(Watershed Name and Project)

◇ NRCS
Natural Resources Conservation Service
United States Department of Agriculture

File No.

Drawing No.

Drawing revision date/time group.

00/00/00 00:00
Sheet   of

2.4

4.75

2.25

.3

.35

.3

1.0
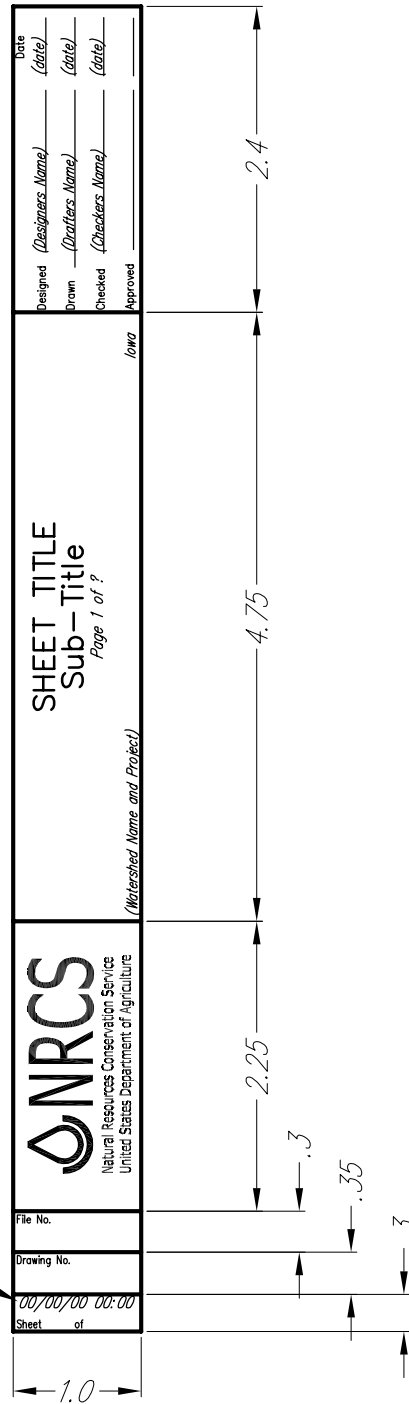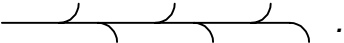
Appendix I Figure 4. Standard title block for 11" x 17" media.

Appendix II: Sample Construction Notes

NOTES:

1. *Clear and Grub the entire area enclosed by the symbol "ШШ".*

2. *Clear and Grub the entire area within the Work Limits as staked in the field.*

3. *For details of Field Fence, see sheet _____.*

4. *Waste material may be spread in the "Waste Area" as shown below Elev. _____.*

5. *The excavated areas of the auxiliary spillway shall be topsoiled in accordance with Construction Specification 26A.*

6. *Hill borrow area(s) shall be topsoiled in accordance with Construction Specification 26A.*

7. *The excavated areas of the auxiliary spillway and outlet channel banks shall be topsoiled in accordance with Construction Specification 26A.*

8. *Spread topsoil on all surfaces of the auxiliary spillway and the embankment except for the portion of the upstream slope below elev._____ .*

9. *Topsoil shall be spread to a depth of not less then _____ ft.*

10. *Construct diversion along tops of slopes marked* ⌐‿‿‿‿ .

11. *FH=__; b=__; ss =__:1; s = variable.*

12. *For profile, see Sheet _____.*

13. *Outlet Channel Data: b =__, s =___, ss = ___:1.*

14. *Borrow as directed by the Engineer .*

15. *For details of Rock Fence Barrier, See Sheet _____.*

16. *Materials from the area labeled "Hill Borrow" will not be used as fill material until all suitable materials from the required excavations and the Primary Borrow Area have been used as directed by the engineer.*

17. *Strip and stockpile 6" of topsoil from the area designated "Hill Borrow". After borrow operations are completed spread this stockpile on the surface of the area designated "Hill Borrow".*

18. *Borrow from adjacent gully banks within the work limits.*

19. *Finished slopes will be 3:1 or flatter.*

20. *After borrow operations are completed, construct level terraces in borrow area as staked by the engineer. T=0.0, b = 0.0, FH = 3.0, backslope = 2:1, frontslope = 5:1, see Construction Specification 27, Diversions.*

21. *The surface area of the normal pool (Elev.) is _____ acres.*

22. *Road aggregate shall be stripped from the existing roadway and the field lane and stockpiled for replacement after earthfill is completed.*

23. *Borrow excavation from the pool area shall not be taken from an area within 50' upstream of the earthfill where the normal pool depth is greater than 5'. Borrow slopes within the normal pool area shall be no steeper than 3:1. A minimum of 4 feet of cover shall remain over bedrock in the pool area. Where normal water depth is less than 5 feet, the minimum cover over bedrock shall be 2 feet.*

24. *Alternative borrow areas shall be used only after primary and pool borrow areas are exhausted. One foot of topsoil shall be removed and stockpiled for replacement after borrow. Two feet of soil shall remain over bedrock resulting in a final depth of 3 feet after topsoil replacement.*

25. *The Primary Borrow area shall be shaped with slopes at 16% or flatter. The uphill edge of the borrow may begin on a 3:1 from the downstream toe of the existing terrace. Final grading shall direct road ditch water away from the downstream toe of the dam and safely into the drainage way.*

26. *Alternate Borrow areas shall be shaped to maximize areas that are flatter than 8% slope. The maximum finished slopes shall be 16%. Borrow shall improve the storage of the existing terraces as directed by the engineer.*

27. *All rock 6 inches or greater and other foreign material shall not be allowed in the earthfill dam. All rock 6 inches or greater shall be placed in the pipe outlet area to dissipate the water force.*

28. *Outlet channel shaping: Bottom width = 10', length = 50'.*

Typical construction notes could be saved as a block and placed in the *My Projects\Symbols and Blocks* directory or saved as a Word document into the *My Projects\OLE* directory. OLE documents may use the font Arial in italic to approximately match the Notes_Dimensions text style.

Appendix III – Sample NRCS Line Styles

Sample Line	Line Style Name	Line Use
	Continuous	A solid line for most drawing purposes.
	BANKPROF	Bank lines in a profile view.
	BK	Bank lines in a plan view.
	BORDER	Borders of unknown type.
	BU	Buried utility lines. (Label type of utility.)
	CL	Center line of structure in a plan view, or alignment.
	CLXS	Center line in a section or profile sheet.
	CountyLine	County boundaries.
	DIVERSION	Diversions in a plan view.
	FC	Existing fences in a plan view.
	FENCE_NEW	Indicates fences to be constructed.
	FENCE_REMOVE	Indicates existing fences to be removed.
	FL	Stream flow line.
	FL1	One dot flow line.
	FL2	Two dot flow line.
	GROUND	Ground line in a section view.
	HIDDEN	Hidden line in all views.
	PHANTOM	Phantom lines in all views.
	StateLine	State boundary.
	TERRACE	Terrace in a plan view.
	TileExisting	Existing tile line in a plan view.
	TileProposed	Proposed tile line in a plan view.
	TownshipLine	Township boundary.
	TRACKS	Railroad tracks.
	TRACKSA	Abandoned railroad tracks.
	Water_Line	Underground water line.
	WORK_LIMITS	Work limits on a plan view.
	STANDARD	Multi-line style, default.
	DIRTROAD	Multi-line style, dirt road on a location map.
	IMPROVEDROAD	Multi-line style, improved road on a location map.
	PAVEDROAD	Multi-line style, paved road on a location map.
	PFROAD	Multi-line style, private or field road on a location map.
	OPENDITCH	Multi-line style, open ditch on a plan view.
	OPENDITCHTOCLEAN	Multi-line style, open ditch to be cleaned on a plan view

Appendix IV - Line Weight Chart				
Line Weight Description	**Common Uses**	**Acad Width 8.5"x11" Inches (mm)**	**Acad Width 11"x17" Inches (mm)**	**Acad Width 22"x34" Inches (mm)**
Ultra-Light	Fine Grid Lines* Intermediate Contour Lines*	0.000 (0.00)	0.000 (0.00)	0.000 (0.00)
Light	Index Contour Lines*	0.004 (0.09)	0.004 (0.09)	0.007 (0.18)
Thin	Heavy Grid Lines Notes and Dimensions Hidden Lines Center Lines Section Lines Long Break Lines	0.007 (0.18)	0.007 (0.18)	0.014 (0.35)
Medium	Visible Lines Structure Lines Grade Lines Groundlines Breaklines Catch Lines Feature Lines Stations and Elevations Normal Pool Contour Flooded Pool Contour	0.014 (0.35)	0.014 (0.35)	0.028 (0.70)
Thick	Title Block Lettering View Titles Quantity Titles Cutting-Plane Lines Viewing-Plane Lines	0.021 (0.53)	0.021 (0.53)	0.035 (0.88)
Border Lines	Title Block Borders Cover Sheet Titles Work Limit Lines	0.028 (0.70)	0.028 (0.70)	0.042 (1.06)

*Optional Color/Line Weight Combinations

Color 252 (Use *NRCS IA BWgray.ctb plot style.)*	Index Contours Index Contour Annotations	0.014 (0.35)	0.014 (0.35)	0.028 (0.70)
Color 253 (Use *NRCS IA BWgray.ctb plot style.)*	Fine Grid Lines Intermediate Contours Hatch Patterns NRCS Logo on Title Blocks	0.007 (0.18)	0.007 (0.18)	0.014 (0.35)

Variations among plotting equipment may require adjustment of line weights in order to get desired results.

Appendix IV – Line Weight Examples

Width in Inches (mm)	Line Weight 8 ½"x11" – 11"x17" Drawings	Where Used	Line Weight 22"x34" Drawings	Width in Inches (mm)
0.000 (0.00)	Ultra–Light	Intermediate Contours Fine Grid Lines	Ultra–Light	0.000 (0.00)
0.004 (0.09)	Light	Index Contours Heavy Grid Lines	Light	0.007 (0.18)
0.007 (0.18)	Thin	Text, Notes and Dimensions	Thin	0.014 (0.35)
0.014 (0.35)	Medium	Text, Stations and Elevations	Medium	0.028 (0.70)
0.021 (0.53)	Thick	Text, Lettering	Thick	0.035 (0.88)
0.014 (0.35)	Medium	Visible Outline	Medium	0.028 (0.70)
0.007 (0.18)	Thin	Hidden Outline	Thin	0.014 (0.35)
0.007 (0.18)	Thin	Center Line	Thin	0.014 (0.35)
0.007 (0.18)	Thin	Extension, Dimension, Cross Section Lines	Thin	0.014 (0.35)
0.007 (0.18)	Thin	Phantom, Repeat Lines, Alternate Position, Adjacent Parts	Thin	0.014 (0.35)
0.014 (0.35)	Medium	Cutting Plane or Viewing Plane Lines	Medium	0.028 (0.70)
0.014 (0.35)	Medium	Break Line	Medium	0.028 (0.70)
0.007 (0.18)	Thin	Long Break Line	Thin	0.014 (0.35)
0.028 (0.70)	Border	Border Line	Border	0.042 (1.06)
0.028 (0.70)	Border	Work Limits	Border	0.042 (1.06)

Appendix V - Text Style Settings

Text Style	Examples of Use
Notes and Dimensions	Used most frequently. All notes, labels, text leaders, elevation leaders, contour annotation, dimensions, tables, slope identifiers, point descriptions, spot elevations, line identifiers and all text not mentioned below.
Lettering	Used for lettering title block titles, view titles, table titles, view indicators, section titles, profile titles and cover sheet titles. Font size and weight can be altered on cover sheets for effect.
Stations and Elevations	Used for labeling station and elevation datum in cross section and profile sheets.
Standard	Used only for custom line styles and certain Eagle Point text. DO NOT ALTER.

Text Style	Plotted Text Height		Base Font	Width Factor	Oblique Angle
	11 x 17 sheet	22 x 34 sheet			
Notes and Dimensions	0.09"	0.18"	simplex.shx	0.75	22
Lettering	0.16"	0.32"	simplex.shx	1	0
Stations and Elevations	0.12"	0.24"	simplex.shx	0.667	0
Standard	NA	NA	txt.shx	1	0

Template drawings contain preset text styles for varying scales. The textstyle name reflects the intended scale and sheet size as well as the type of text that it is used for.

A major amount of text can be drawn in paperspace. Use the 001x version of a text style for paperspace text. Example: use *001xd_Notes_Dimensions* for notes placed in paperspace on a "**d**" (22x34) size drawing.

Text that is placed in modelspace needs to be inserted based on the plot scale of the view. Example: use the *050xb_Notes_Dimensions* text style for text that is placed in modelspace which is intended to appear in a viewport plotted at a **50** scale on a "**b**" (11x17) size drawing.

OLE text could be used to approximately match the textstyles. A font of Arial in italic is comparable to the Notes and Dimensions textstyle.

Text Style Settings for Use with AutoCAD (Engineering Scales)

	Style	Scale	Text Height:	Font	Width Factor	Oblique Angle
11 x 17 Drawings	001xb_Notes_Dimensions	1	0.0900	simplex.shx	0.7500	22.0
	002xb_Notes_Dimensions	2	0.1800	simplex.shx	0.7500	22.0
	010xb_Notes_Dimensions	10	0.9000	simplex.shx	0.7500	22.0
	020xb_Notes_Dimensions	20	1.8000	simplex.shx	0.7500	22.0
	040xb_Notes_Dimensions	40	3.6000	simplex.shx	0.7500	22.0
	050xb_Notes_Dimensions	50	4.5000	simplex.shx	0.7500	22.0
	100xb_Notes_Dimensions	100	9.0000	simplex.shx	0.7500	22.0
	200xb_Notes_Dimensions	200	18.0000	simplex.shx	0.7500	22.0
	400xb_Notes_Dimensions	400	36.0000	simplex.shx	0.7500	22.0
	500xb_Notes_Dimensions	500	45.0000	simplex.shx	0.7500	22.0
	001xb_Lettering	1	0.1600	simplex.shx	1.0000	0.0
	002xb_Lettering	2	0.3200	simplex.shx	1.0000	0.0
	010xb_Lettering	10	1.6000	simplex.shx	1.0000	0.0
	020xb_Lettering	20	3.2000	simplex.shx	1.0000	0.0
	040xb_Lettering	40	6.4000	simplex.shx	1.0000	0.0
	050xb_Lettering	50	8.0000	simplex.shx	1.0000	0.0
	100xb_Lettering	100	16.0000	simplex.shx	1.0000	0.0
	200xb_Lettering	200	32.0000	simplex.shx	1.0000	0.0
	400xb_Lettering	400	64.0000	simplex.shx	1.0000	0.0
	500xb_Lettering	500	80.0000	simplex.shx	1.0000	0.0
	001xb_Stations_Elevations	1	0.1200	simplex.shx	0.6670	0.0
	002xb_Stations_Elevations	2	0.2400	simplex.shx	0.6670	0.0
	010xb_Stations_Elevations	10	1.2000	simplex.shx	0.6670	0.0
	020xb_Stations_Elevations	20	2.4000	simplex.shx	0.6670	0.0
	040xb_Stations_Elevations	40	4.8000	simplex.shx	0.6670	0.0
	050xb_Stations_Elevations	50	6.0000	simplex.shx	0.6670	0.0
	100xb_Stations_Elevations	100	12.0000	simplex.shx	0.6670	0.0
	200xb_Stations_Elevations	200	24.0000	simplex.shx	0.6670	0.0
	400xb_Stations_Elevations	400	48.0000	simplex.shx	0.6670	0.0
	500xb_Stations_Elevations	500	60.0000	simplex.shx	0.6670	0.0
	Standard	na	0.0000	txt.shx	1.0000	0.0
22 x34 Drawings	001xd_Notes_Dimensions	1	0.1800	simplex.shx	0.7500	22.0
	002xd_Notes_Dimensions	2	0.3600	simplex.shx	0.7500	22.0
	010xd_Notes_Dimensions	10	1.8000	simplex.shx	0.7500	22.0
	020xd_Notes_Dimensions	20	3.6000	simplex.shx	0.7500	22.0
	040xd_Notes_Dimensions	40	7.2000	simplex.shx	0.7500	22.0
	050xd_Notes_Dimensions	50	9.0000	simplex.shx	0.7500	22.0
	100xd_Notes_Dimensions	100	18.0000	simplex.shx	0.7500	22.0
	200xd_Notes_Dimensions	200	36.0000	simplex.shx	0.7500	22.0
	400xd_Notes_Dimensions	400	72.0000	simplex.shx	0.7500	22.0
	500xd_Notes_Dimensions	500	90.0000	simplex.shx	0.7500	22.0
	001xd_Lettering	1	0.3200	simplex.shx	1.0000	0.0
	002xd_Lettering	2	0.6400	simplex.shx	1.0000	0.0
	010xd_Lettering	10	3.2000	simplex.shx	1.0000	0.0
	020xd_Lettering	20	6.4000	simplex.shx	1.0000	0.0
	040xd_Lettering	40	12.8000	simplex.shx	1.0000	0.0
	050xd_Lettering	50	16.0000	simplex.shx	1.0000	0.0
	100xd_Lettering	100	32.0000	simplex.shx	1.0000	0.0
	200xd_Lettering	200	64.0000	simplex.shx	1.0000	0.0
	400xd_Lettering	400	128.0000	simplex.shx	1.0000	0.0
	500xd_Lettering	500	160.0000	simplex.shx	1.0000	0.0
	001xd_Stations_Elevations	1	0.2400	simplex.shx	0.6670	0.0
	002xd_Stations_Elevations	2	0.4800	simplex.shx	0.6670	0.0
	010xd_Stations_Elevations	10	2.4000	simplex.shx	0.6670	0.0
	020xd_Stations_Elevations	20	4.8000	simplex.shx	0.6670	0.0
	040xd_Stations_Elevations	40	9.6000	simplex.shx	0.6670	0.0
	050xd_Stations_Elevations	50	12.0000	simplex.shx	0.6670	0.0
	100xd_Stations_Elevations	100	24.0000	simplex.shx	0.6670	0.0
	200xd_Stations_Elevations	200	48.0000	simplex.shx	0.6670	0.0
	400xd_Stations_Elevations	400	96.0000	simplex.shx	0.6670	0.0
	500xd_Stations_Elevations	500	120.0000	simplex.shx	0.6670	0.0
	Standard	na	0.0000	txt.shx	1.0000	0.0

Text Style Settings for Use with AutoCAD (Architectural Scales)

	Style	Scale	Factor	Text Height:	Font	Width Factor	Oblique Angle
11 x 17 Drawings	001xb_Notes_Dimensions	1'=1'	1	0.0900	simplex.shx	0.7500	22.0
	002xb_Notes_Dimensions	6"=1'	2	0.1800	simplex.shx	0.7500	22.0
	004xb_Notes_Dimensions	3"=1'	4	0.3600	simplex.shx	0.7500	22.0
	008xb_Notes_Dimensions	1 1/2"=1'	8	0.7200	simplex.shx	0.7500	22.0
	012xb_Notes_Dimensions	1"=1'	12	1.0800	simplex.shx	0.7500	22.0
	016xb_Notes_Dimensions	3/4"=1'	16	1.4400	simplex.shx	0.7500	22.0
	024xb_Notes_Dimensions	1/2"=1'	24	2.1600	simplex.shx	0.7500	22.0
	032xb_Notes_Dimensions	3/8"=1'	32	2.8800	simplex.shx	0.7500	22.0
	048xb_Notes_Dimensions	1/4"=1'	48	4.3200	simplex.shx	0.7500	22.0
	064xb_Notes_Dimensions	3/16"=1'	64	5.7600	simplex.shx	0.7500	22.0
	096xb_Notes_Dimensions	1/8"=1'	96	8.6400	simplex.shx	0.7500	22.0
	128xb_Notes_Dimensions	3/32"=1'	128	11.5200	simplex.shx	0.7500	22.0
	192xb_Notes_Dimensions	1/16"=1'	192	17.2800	simplex.shx	0.7500	22.0
	001xb_Lettering	1'=1'	1	0.1600	simplex.shx	1.0000	0.0
	002xb_Lettering	6"=1'	2	0.3200	simplex.shx	1.0000	0.0
	004xb_Lettering	3"=1'	5	0.8000	simplex.shx	1.0000	0.0
	008xb_Lettering	1 1/2"=1'	8	1.2800	simplex.shx	1.0000	0.0
	012xb_Lettering	1"=1'	12	1.9200	simplex.shx	1.0000	0.0
	016xb_Lettering	3/4"=1'	16	2.5600	simplex.shx	1.0000	0.0
	024xb_Lettering	1/2"=1'	24	3.8400	simplex.shx	1.0000	0.0
	032xb_Lettering	3/8"=1'	32	5.1200	simplex.shx	1.0000	0.0
	048xb_Lettering	1/4"=1'	48	7.6800	simplex.shx	1.0000	0.0
	064xb_Lettering	3/16"=1'	64	10.2400	simplex.shx	1.0000	0.0
	096xb_Lettering	1/8"=1'	96	15.3600	simplex.shx	1.0000	0.0
	128xb_Lettering	3/32"=1'	128	20.4800	simplex.shx	1.0000	0.0
	192xb_Lettering	1/16"=1'	192	30.7200	simplex.shx	1.0000	0.0
	001xb_Stations_Elevations	1'=1'	1	0.1200	simplex.shx	0.6670	0.0
	002xb_Stations_Elevations	6"=1'	2	0.2400	simplex.shx	0.6670	0.0
	004xb_Stations_Elevations	3"=1'	4	0.4800	simplex.shx	0.6670	0.0
	008xb_Stations_Elevations	1 1/2"=1'	8	0.9600	simplex.shx	0.6670	0.0
	012xb_Stations_Elevations	1"=1'	12	1.4400	simplex.shx	0.6670	0.0
	016xb_Stations_Elevations	3/4"=1'	16	1.9200	simplex.shx	0.6670	0.0
	024xb_Stations_Elevations	1/2"=1'	24	2.8800	simplex.shx	0.6670	0.0
	032xb_Stations_Elevations	3/8"=1'	32	3.8400	simplex.shx	0.6670	0.0
	048xb_Stations_Elevations	1/4"=1'	48	5.7600	simplex.shx	0.6670	0.0
	064xb_Stations_Elevations	3/16"=1'	64	7.6800	simplex.shx	0.6670	0.0
	096xb_Stations_Elevations	1/8"=1'	96	11.5200	simplex.shx	0.6670	0.0
	128xb_Stations_Elevations	3/32"=1'	128	15.3600	simplex.shx	0.6670	0.0
	192xb_Stations_Elevations	1/16"=1'	192	23.0400	simplex.shx	0.6670	0.0
	Standard	na	na	0.0000	txt.shx	1.0000	0.0

Text Style Settings for Use with AutoCAD (Architectural Scales)

	Style	Scale	Factor	Text Height:	Font	Width Factor	Oblique Angle
22 x34 Drawings	001xd_Notes_Dimensions	1'=1'	1	0.1800	simplex.shx	0.7500	22.0
	002xd_Notes_Dimensions	6"=1'	2	0.3600	simplex.shx	0.7500	22.0
	004xd_Notes_Dimensions	3"=1'	4	0.7200	simplex.shx	0.7500	22.0
	008xd_Notes_Dimensions	1 1/2"=1'	8	1.4400	simplex.shx	0.7500	22.0
	012xd_Notes_Dimensions	1"=1'	12	2.1600	simplex.shx	0.7500	22.0
	016xd_Notes_Dimensions	3/4"=1'	16	2.8800	simplex.shx	0.7500	22.0
	024xd_Notes_Dimensions	1/2"=1'	24	4.3200	simplex.shx	0.7500	22.0
	032xd_Notes_Dimensions	3/8"=1'	32	5.7600	simplex.shx	0.7500	22.0
	048xd_Notes_Dimensions	1/4"=1'	48	8.6400	simplex.shx	0.7500	22.0
	064xd_Notes_Dimensions	3/16"=1'	64	11.5200	simplex.shx	0.7500	22.0
	096xd_Notes_Dimensions	1/8"=1'	96	17.2800	simplex.shx	0.7500	22.0
	128xd_Notes_Dimensions	3/32"=1'	128	23.0400	simplex.shx	0.7500	22.0
	192xd_Notes_Dimensions	1/16"=1'	192	34.5600	simplex.shx	0.7500	22.0
	001xd_Lettering	1'=1'	1	0.3200	simplex.shx	1.0000	0.0
	002xd_Lettering	6"=1'	2	0.6400	simplex.shx	1.0000	0.0
	004xd_Lettering	3"=1'	4	1.2800	simplex.shx	1.0000	0.0
	008xd_Lettering	1 1/2"=1'	8	2.5600	simplex.shx	1.0000	0.0
	012xd_Lettering	1"=1'	12	3.8400	simplex.shx	1.0000	0.0
	016xd_Lettering	3/4"=1'	16	5.1200	simplex.shx	1.0000	0.0
	024xd_Lettering	1/2"=1'	24	7.6800	simplex.shx	1.0000	0.0
	032xd_Lettering	3/8"=1'	32	10.2400	simplex.shx	1.0000	0.0
	048xd_Lettering	1/4"=1'	48	15.3600	simplex.shx	1.0000	0.0
	064xd_Lettering	3/16"=1'	64	20.4800	simplex.shx	1.0000	0.0
	096xd_Lettering	1/8"=1'	96	30.7200	simplex.shx	1.0000	0.0
	128xd_Lettering	3/32"=1'	128	40.9600	simplex.shx	1.0000	0.0
	192xd_Lettering	1/16"=1'	192	61.4400	simplex.shx	1.0000	0.0
	001xd_Stations_Elevations	1'=1'	1	0.2400	simplex.shx	0.6670	0.0
	002xd_Stations_Elevations	6"=1'	2	0.4800	simplex.shx	0.6670	0.0
	004xd_Stations_Elevations	3"=1'	4	0.9600	simplex.shx	0.6670	0.0
	008xd_Stations_Elevations	1 1/2"=1'	8	1.9200	simplex.shx	0.6670	0.0
	012xd_Stations_Elevations	1"=1'	12	2.8800	simplex.shx	0.6670	0.0
	016xd_Stations_Elevations	3/4"=1'	16	3.8400	simplex.shx	0.6670	0.0
	024xd_Stations_Elevations	1/2"=1'	24	5.7600	simplex.shx	0.6670	0.0
	032xd_Stations_Elevations	3/8"=1'	32	7.6800	simplex.shx	0.6670	0.0
	048xd_Stations_Elevations	1/4"=1'	48	11.5200	simplex.shx	0.6670	0.0
	064xd_Stations_Elevations	3/16"=1'	64	15.3600	simplex.shx	0.6670	0.0
	096xd_Stations_Elevations	1/8"=1'	96	23.0400	simplex.shx	0.6670	0.0
	128xd_Stations_Elevations	3/32"=1'	128	30.7200	simplex.shx	0.6670	0.0
	192xd_Stations_Elevations	1/16"=1'	192	46.0800	simplex.shx	0.6670	0.0
	Standard	na	na	0.0000	txt.shx	1.0000	0.0

Appendix VI - Dimension Style Settings

Dimension Style		Plotted Heights and Line Lengths							
		Text		Lines and Arrows					
		Text Appearance	Text Placement	Extension Lines		Arrowheads			Center Marks for Circles
Style	Sheet Size	Text Height:	Offset from dim line:	Extend beyond dim lines:	Offset from Origin	1st: 2nd: Leader	Arrow size:		Size
###xb_Dimension	11 x 17	0.0900	0.0450	0.0450	0.0450	Closed fille	0.0900		0.0900
###xd_Dimension	22 x 34	0.1800	0.0900	0.0900	0.0900	Closed fille	0.1800		0.1800

Template drawings contain preset dimension styles for varying scales. The dimension style name reflects the intended scale and sheet size.

Use the 001x version of a dimension style for paperspace text. Example: use 001xd_ Dimensions for notes placed in paperspace on a "d" (22x34) size drawing.

Dimensioning that is placed in modelspace needs to be inserted based on the plot scale of the view. Example: use the 048xb_ Dimensions text style for dimensioning that is placed in modelspace which is intended to appear in a viewport plotted at a ¼"=1' scale on a "b" (11x17) size drawing.

Dimensions Style Settings for Use with AutoCAD (Engineering Scale)

Custom Dimension Styles for a 11" x 17" Engineer Scaled Drawing									
NOTE: All dimension styles use the Notes_Dimension text style of the same name.									
Dimension Style			Text		Lines and Arrows				
			Text Appearance	Text Placement	Extension Lines		Arrowheads		Center Marks for Circles
Style	Scale	Factor	Text Height:	Offset from dim line:	Extend beyond dim lines:	Offset from Origin	1st: 2nd: Leader	Arrow size:	Size
001xb_Dimension	1"=1'	1	0.0900	0.0450	0.0450	0.0450	Closed fille	0.0900	0.0900
002xb_Dimension	1"=2'	2	0.1800	0.0900	0.0900	0.0900	Closed fille	0.1800	0.1800
010xb_Dimension	1"=10'	10	0.9000	0.4500	0.4500	0.4500	Closed fille	0.9000	0.9000
020xb_Dimension	1"=20'	20	1.8000	0.9000	0.9000	0.9000	Closed fille	1.8000	1.8000
040xb_Dimension	1"=40'	40	3.6000	1.8000	1.8000	1.8000	Closed fille	3.6000	3.6000
050xb_Dimension	1"=50'	50	4.5000	2.2500	2.2500	2.2500	Closed fille	4.5000	4.5000
100xb_Dimension	1"=100'	100	9.0000	4.5000	4.5000	4.5000	Closed fille	9.0000	9.0000
200xb_Dimension	1"=200'	200	18.0000	9.0000	9.0000	9.0000	Closed fille	18.0000	18.0000
400xb_Dimension	1"=400'	400	36.0000	18.0000	18.0000	18.0000	Closed fille	36.0000	36.0000
500xb_Dimension	1"=500'	500	45.0000	22.5000	22.5000	22.5000	Closed fille	45.0000	45.0000

Custom Dimension Styles for a 22" x 34" Engineer Scaled Drawing									
NOTE: All dimension styles use the Notes_Dimension text style of the same name.									
Dimension Style			Text		Lines and Arrows				
			Text Appearance	Text Placement	Extension Lines		Arrowheads		Center Marks for Circles
Style	Scale	Factor	Text Height:	Offset from dim line:	Extend beyond dim lines:	Offset from Origin	1st: 2nd: Leader	Arrow size:	Size
001xd_Dimension	1"=1'	1	0.1800	0.0900	0.0900	0.0900	Closed fille	0.1800	0.1800
002xd_Dimension	1"=2'	2	0.3600	0.1800	0.1800	0.1800	Closed fille	0.3600	0.3600
010xd_Dimension	1"=10'	10	1.8000	0.9000	0.9000	0.9000	Closed fille	1.8000	1.8000
020xd_Dimension	1"=20'	20	3.6000	1.8000	1.8000	1.8000	Closed fille	3.6000	3.6000
040xd_Dimension	1"=40'	40	7.2000	3.6000	3.6000	3.6000	Closed fille	7.2000	7.2000
050xd_Dimension	1"=50'	50	9.0000	4.5000	4.5000	4.5000	Closed fille	9.0000	9.0000
100xd_Dimension	1"=100'	100	18.0000	9.0000	9.0000	9.0000	Closed fille	18.0000	18.0000
200xd_Dimension	1"=200'	200	36.0000	18.0000	18.0000	18.0000	Closed fille	36.0000	36.0000
400xd_Dimension	1"=400'	400	72.0000	36.0000	36.0000	36.0000	Closed fille	72.0000	72.0000
500xd_Dimension	1"=500'	500	90.0000	45.0000	45.0000	45.0000	Closed fille	90.0000	90.0000

Dimensions Text Style Settings for Use with AutoCAD (Architectural Scale)

Custom Dimension Styles for a 11" x 17" Architectural Scaled Drawing
NOTE: All dimension styles use the Notes_Dimension text style of the same name.

Dimension Style			Text		Lines and Arrows				Center Marks for Circles
			Text Appearance	Text Placement	Extension Lines		Arrowheads		
Style	Scale	Factor	Text Height:	Offset from dim line:	Extend beyond dim lines:	Offset from Origin	1st: 2nd: Leader	Arrow size:	Size
001xb_Dimension	1'=1'	1	0.0900	0.0450	0.0450	0.0450	Closed filled	0.0900	0.0900
002xb_Dimension	6"=1'	2	0.1800	0.0900	0.0900	0.0900	Closed filled	0.1800	0.1800
004xb_Dimension	3"=1'	4	0.3600	0.1800	0.1800	0.1800	Closed filled	0.3600	0.3600
008xb_Dimension	1 1/2"=1'	8	0.7200	0.3600	0.3600	0.3600	Closed filled	0.7200	0.7200
012xb_Dimension	1"=1'	12	1.0800	0.5400	0.5400	0.5400	Closed filled	1.0800	1.0800
016xb_Dimension	3/4"=1'	16	1.4400	0.7200	0.7200	0.7200	Closed filled	1.4400	1.4400
024xb_Dimension	1/2"=1'	24	2.1600	1.0800	1.0800	1.0800	Closed filled	2.1600	2.1600
032xb_Dimension	3/8"=1'	32	2.8800	1.4400	1.4400	1.4400	Closed filled	2.8800	2.8800
048xb_Dimension	1/4"=1'	48	4.3200	2.1600	2.1600	2.1600	Closed filled	4.3200	4.3200
064xb_Dimension	3/16"=1'	64	5.7600	2.8800	2.8800	2.8800	Closed filled	5.7600	5.7600
096xb_Dimension	1/8"=1'	96	8.6400	4.3200	4.3200	4.3200	Closed filled	8.6400	8.6400
128xb_Dimension	3/32"=1'	128	11.5200	5.7600	5.7600	5.7600	Closed filled	11.5200	11.5200
192xb_Dimension	1/16"=1'	192	17.2800	8.6400	8.6400	8.6400	Closed filled	17.2800	17.2800

Custom Dimension Styles for a 22" x 34" Architectural Scaled Drawing
NOTE: All dimension styles use the Notes_Dimension text style of the same name.

Dimension Style			Text		Lines and Arrows				Center Marks for Circles
			Text Appearance	Text Placement	Extension Lines		Arrowheads		
Style	Scale	Factor	Text Height:	Offset from dim line:	Extend beyond dim lines:	Offset from Origin	1st: 2nd: Leader	Arrow size:	Size
001xd_Dimension	1'=1'	1	0.1800	0.0900	0.0900	0.0900	Closed filled	0.1800	0.1800
002xd_Dimension	6"=1'	2	0.3600	0.1800	0.1800	0.1800	Closed filled	0.3600	0.3600
004xd_Dimension	3"=1'	4	0.7200	0.3600	0.3600	0.3600	Closed filled	0.7200	0.7200
008xd_Dimension	1 1/2"=1'	8	1.4400	0.7200	0.7200	0.7200	Closed filled	1.4400	1.4400
012xd_Dimension	1"=1'	12	2.1600	1.0800	1.0800	1.0800	Closed filled	2.1600	2.1600
016xd_Dimension	3/4"=1'	16	2.8800	1.4400	1.4400	1.4400	Closed filled	2.8800	2.8800
024xd_Dimension	1/2"=1'	24	4.3200	2.1600	2.1600	2.1600	Closed filled	4.3200	4.3200
032xd_Dimension	3/8"=1'	32	5.7600	2.8800	2.8800	2.8800	Closed filled	5.7600	5.7600
048xd_Dimension	1/4"=1'	48	8.6400	4.3200	4.3200	4.3200	Closed filled	8.6400	8.6400
064xd_Dimension	3/16"=1'	64	11.5200	5.7600	5.7600	5.7600	Closed filled	11.5200	11.5200
096xd_Dimension	1/8"=1'	96	17.2800	8.6400	8.6400	8.6400	Closed filled	17.2800	17.2800
128xd_Dimension	3/32"=1'	128	23.0400	11.5200	11.5200	11.5200	Closed filled	23.0400	23.0400
192xd_Dimension	1/16"=1'	192	34.5600	17.2800	17.2800	17.2800	Closed filled	34.5600	34.5600

Appendix VII – Sample Soil Test Tables

EMBANKMENT MATERIAL SOURCES AND PLACEMENT REQUIREMENTS

Embank-ment Zone	SOURCE OF MATERIAL					PLACEMENT & MOISTURE DENSITY REQUIREMENTS					
	Location	Approx. Depth (ft)		Unified Soil Class	Depth of Lift	Max. Size Rock Fragments	Fill Matrix Size Tested	Comp-action Class	Reference Test Method	Required % Compaction	Allow. Moisture Range From Optimum (%)
		From	To								
									Method A ASTM D 698		

Appendix VII Figure 1. Sample of the Embankment Material Sources and Placement Requirements block found in the C:\My Projects\Symbols directory, also available as a word document in the C:\My Projects\OLE directory.

LAB TEST INFORMATION – TYPICAL MATERIALS

Test Hole No.	Approx. Depth (ft)	Unified Soil Class	Reference Test Method	Maximum Dry Density lbs/ft^3	Opitimum Moisture %
			Method A ASTM D 698		

Appendix VII Figure 2. Sample of the Lab Test Information block found in the C:\My Projects\Symbols directory, also available as a word document in the C:\My Projects\OLE directory.

BENCH MARK		
NO.	ELEV.	DESCRIPTION
4-111	1253.25	Top of a 60d spike located in the southwest root of a 24 inch diameter oak tree that is located 200 ft. left of the baseline station 123+45.

Appendix VII Figure 3. Sample of the Bench Mark Table block found in the C:\My Projects\Symbols directory, also available as a word document in the C:\My Projects\OLE directory.

```
CONTRACTOR IS RESPONSIBLE
FOR CALLING IOWA ONE CALL
      1-800-292-8989
```

Appendix VII Figure 4. Sample of the Iowa One Call block found in the C:\My Projects\Symbols directory, also available as a word document in the C:\My Projects\OLE directory.

UNDERGROUND UTILITIES

2 WORKING DAYS

BEFORE YOU DIG

CALL TOLL FREE 1-800-362-2764

OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY
OUPS REFERENCE NO._____

Appendix VII Figure 5. Sample of the Ohio Utilites OUPS block.

Appendix VIII – Sample Symbols
(Stored in C:\My Projects\Symbols directory)

Left View Arrow.dwg

Right View Arrow.dwg

CL.dwg

PL.dwg

Hole _sampled.dwg

Hole_logged_only.dwg
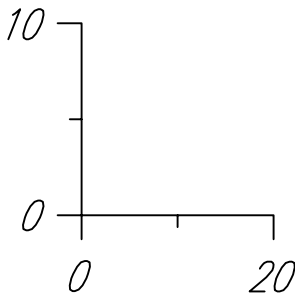
20x10 Scale.dwg

Narrow_17.dwg
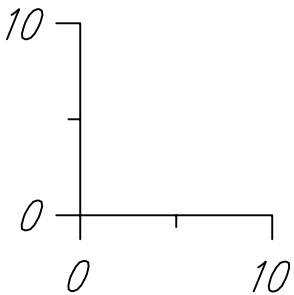
10x10 Scale.dwg

Scale in Feet

Scale001b.dwg

Minimum Real Property Rights
Construction Work Limits
Property Line
Parcel or Lot Boundary
Terrace

RPWM line table.dwg

Appendix IX
Field Codes for Surveying Use

Collection of survey information is a typical beginning point for many projects. The use of field codes & line work for data collection can be a tool for obtaining a good representation of the ground surface.

Use of field codes can allow various types of survey points to be sorted into different layers that allow for easier manipulation of the project. E.g. sometimes it is helpful to not have the normal ground shots displayed while looking at the details of the flowline and bank shots of a gully.

Linework can be a tool that allows the field survey crew to have bank & flowline breaks automatically created. Outlines of buildings or concrete pads and fences can also be placed in the drawing as a result of field entries. The linework settings determine the layers and the linetypes used.

Iowa NRCS Default Field Code Library (sorted by layer)

Field Code	Label	Description of Use	Symbol	Layer	Attribute Style	Masking	Auto Linework
BORR	Borr Limit	Borrow Area Limit	X	V.Fcod.Area	Topo	Include	Off
CLR	Clr Limit	Clearing Limit	X	V.Fcod.Area	Topo	Include	On
DA	DA	Drainage Area	X	V.Fcod.Area	Topo	Include	Off
SEED	Seed Limit	Seeding Limit	X	V.Fcod.Area	Topo	Include	On
WORK	Work Limit	Work Limit	X	V.Fcod.Area	Topo	Include	Off
BK	BK	Top of Bank	BK	V.Fcod.Bank	Topo	Include	On
BK1…3	BK	Top of Bank	BK	V.Fcod.Bank	Topo	Include	On
BT	Bk Toe	Bank Toe	PLUS	V.Fcod.Bank	Topo	Include	Off
LB	LB	Left Bank	BK	V.Fcod.Bank	Topo	Include	On
LB1…3	LB	Left Bank	BK	V.Fcod.Bank	Topo	Include	On
RB	RB	Right Bank	BK	V.Fcod.Bank	Topo	Include	On
RB1…3	RB	Right Bank	BK	V.Fcod.Bank	Topo	Include	On
CL	CL	Centerline	CL	V.Fcod.Clin	Topo	Include	Off
CR	CL Rd	Centerline of Road	CL	V.Fcod.Clin	Topo	Include	Off
ED	Edg Dtch	Edge of Ditch	EDGE	V.Fcod.Edge	Topo	Include	Off
EDGE	Edge	Edge of Something	EDGE	V.Fcod.Edge	Topo	Include	Off
ER	Edg Rd	Edge of a Road	EDGE	V.Fcod.Edge	Topo	Include	Off
RS	Rd Shldr	Road Shoulder	EDGE	V.Fcod.Edge	Topo	Include	Off
FC	FC	Fence	FC	V.Fcod.Fenc	Utilities	Include	Off
FCCOR	FCCOR	Fence Corner	FC	V.Fcod.Fenc	Utilities	Include	Off
FCTEE	FCTEE	Fence Tee	FC	V.Fcod.Fenc	Utilities	Include	Off
X	X	Fence	FC	V.Fcod.Fenc	Utilities	Include	Off
XC	XC	Fence Corner	FC	V.Fcod.Fenc	Utilities	Include	Off
XT	Fnc Tee	Fence Tee	FC	V.Fcod.Fenc	Utilities	Include	Off
FL	FL	Flowline of Stream	FL	V.Fcod.Flow	Topo	Include	On
FL1…3	FL	Flowline of Stream	FL	V.Fcod.Flow	Topo	Include	On
FLJCT	FLJCT	Flowline Junction	FLJCT	V.Fcod.Flow	Topo	Include	Off
OB	Ovrf Btm	Overfall Bottom	PLUS	V.Fcod.Flow	Topo	Include	Off
OT	Ovrf Tp	Overfall Top	PLUS	V.Fcod.Flow	Topo	Include	Off
M	Misc	Miscellaneous	PLUS	V.Fcod.Misc	Utilities	Include	Off
G	G	Ground Shot	PLUS	V.Fcod.Ognd	TopoSpot/TopoElev	Include	Off
PL	PL	Property Line	PL	V.Fcod.Prop	Utilities	Include	Off
60D	60D	60d Spike	BM	V.Fcod.Scpt	Survey Control Point	Exclude	Off
BM	BM	Bench Mark	BM	V.Fcod.Scpt	Survey Control Point	Exclude	Off
CP	CP	Control Point or Pin	BM	V.Fcod.Scpt	Survey Control Point	Exclude	Off
HUB	HUB	Wooden Hub	BM	V.Fcod.Scpt	Survey Control Point	Exclude	Off
INSTR	INSTR	Instrument Point	IPCIR	V.Fcod.Scpt	Survey Control Point	Exclude	Off
IP	IP	Instrument Point	IPCIR	V.Fcod.Scpt	Survey Control Point	Exclude	Off
PIN	Pin	Pin	BM	V.Fcod.Scpt	Survey Control Point	Exclude	Off
SPIKE	Spike	Spike	BM	V.Fcod.Scpt	Survey Control Point	Exclude	Off
TBM	TBM	Temporary Bench Mark	BM	V.Fcod.Scpt	Survey Control Point	Exclude	Off
TP	TP	Turn Point	BM	V.Fcod.Scpt	Survey Control Point	Exclude	Off
BORE	BORE	Soil Borings	DCIRP	V.Fcod.Soil	Topo	Include	Off
AS	Aux Splwy	Auxiliary Spillway	PLUS	V.Fcod.Stru	Topo	Include	Off
SR	Str Ridg	Structure Ridge	PLUS	V.Fcod.Stru	Topo	Include	Off
ST	Str Toe	Structure Toe	PLUS	V.Fcod.Stru	Topo	Include	Off
TOE	Toe	Toe of Something	PLUS	V.Fcod.Stru	Topo	Include	Off
TOP	Top	Top of Something	PLUS	V.Fcod.Stru	Topo	Include	Off
DIV	DIV	Diversion Ridge	PLUS	V.Fcod.Terr	Topo	Include	Off
TER	Terr Rdg	Terrace Ridge	PLUS	V.Fcod.Terr	Topo	Include	Off
TR	Terr Rdg	Terrace Ridge	PLUS	V.Fcod.Terr	Topo	Include	Off
TT	TerrToe	Terrace Toe	PLUS	V.Fcod.Terr	Topo	Include	Off

Iowa NRCS Default Field Code Library (sorted by layer)

Field Code	Label	Description of Use	Symbol	Layer	Attribute Style	Masking	Auto Linework
BLD	Bldg	Building	BLD	V.Fcod.Util	Utilities	Include	Off
BU	Bur Util	Buried Utilities	XBOX	V.Fcod.Util	Utilities	Include	Off
BW	Btm of Wall	Bottom of Wall	PLUS	V.Fcod.Util	Utilities	Include	Off
CE	Conc Edg	Concrete Edge	PLUS	V.Fcod.Util	Utilities	Include	Off
CMP	CMP	Corrugated Metal Pipe	XCIR	V.Fcod.Util	Utilities	Include	Off
CV	Culv	Culvert	XCIR	V.Fcod.Util	Utilities	Include	Off
FLOOR	FLOOR	Floor of Concrete	PLUS	V.Fcod.Util	Utilities	Include	Off
FTG	Ftg	Flooting of Concre	PLUS	V.Fcod.Util	Utilities	Include	Off
GB	G Bin	Grain Bin	PLUS	V.Fcod.Util	Utilities	Include	Off
LOT	LOT	Feedlot	PLUS	V.Fcod.Util	Utilities	Include	Off
PB	Pwr Box	Power Box	PBOX	V.Fcod.Util	Utilities	Include	Off
PP	PP	Power Pole	PP	V.Fcod.Util	Utilities	Include	Off
PVC	PVC	Poly Vinyl Chloride Pipe	XCIR	V.Fcod.Util	Utilities	Include	Off
RCP	RCP	Reinforced Concrete	XCIR	V.Fcod.Util	Utilities	Include	Off
SMP	SMP	Smooth Metal Pipe	XCIR	V.Fcod.Util	Utilities	Include	Off
TB	Tele Box	Telephone Box	TBOX	V.Fcod.Util	Utilities	Include	Off
TI	Tile Inl	Tile Inlet Flowline	XCIR	V.Fcod.Util	Utilities	Include	Off
TO	Tile Out	Tile Outlet Flowline	XCIR	V.Fcod.Util	Utilities	Include	Off
TTI	Top Terr Inta	Top of Tile Inlet	XCIR	V.Fcod.Util	Utilities	Exclude	Off
TW	Top of Wall	Top of Wall	PLUS	V.Fcod.Util	Utilities	Exclude	Off
Wall	Wall	Top of Concrete Wall	PLUS	V.Fcod.Util	Utilities	Exclude	Off
WELL	Well	Well	WELL	V.Fcod.Util	Utilities	Include	Off
WT	Well Top	Top of Well	WELL	V.Fcod.Util	Utilities	Exclude	Off
CTREE	CTREE	Coniferous Tree	CTREE	V.Fcod.Vege	TopoDescription	Include	Off
DTREE	DTREE	DeciduousTree	DTREE	V.Fcod.Vege	TopoDescription	Include	Off
TC	Ctree	Coniferous Tree	CTREE	V.Fcod.Vege	TopoDescription	Include	Off
TD	Dtree	DeciduousTree	DTREE	V.Fcod.Vege	TopoDescription	Include	Off
EW	Edg H20	Edge of Water	WL	V.Fcod.Wlin	Topo	Include	Off
WL	WL	Water Line	WL	V.Fcod.Wlin	Topo	Include	Off
WE	WW Edge	Waterway Edge	PLUS	V.Fcod.Wway	Topo	Include	Off
WW	WW	Waterway	WW	V.Fcod.Wway	Topo	Include	Off

Masking: Exclude = Exclude shot from being used for creating a surface model
Auto Linework can be turned off for the entire project in the Data Collection Reduction Settings

Attribute Style Settings				
Attribute Annotation	**Layer Name**	**Text Height**	**Delta X**	**Delta Y**
Topo				
Point Number	V.Poin.Topo.Nmbr	0.10	0.067	0.070
Description	V.Poin.Topo.Desc	0.10	0.067	-0.035
Elevation	V.Poin.Topo.Elev	0.10	0.067	-0.140
Utilities				
Point Number	V.Poin.Util.Nmbr	0.10	0.067	0.070
Description	V.Poin.Util.Desc	0.10	0.067	-0.035
Elevation	V.Poin.Util.Elev	0.10	0.067	-0.140
Survey Control Points				
Point Number	V.Poin.Scpt.Nmbr	0.10	0.067	0.070
Description	V.Poin.Scpt.Desc	0.10	0.067	-0.035
Elevation	V.Poin.Scpt.Elev	0.10	0.067	-0.140
Northing	V.Poin.Scpt.Coor	0.10	-0.067	0.070
Easting	V.Poin.Scpt.Coor	0.10	-0.067	-0.035

Topo & Utilities have Pt#, Elev & Description displayed
Survey Control Point has N, E, Elev, Pt#, & Description
TopoDescription has Pt#, Description
TopoSpot has Pt# only
TopoElevation has Pt#, Elev

Symbol	Code		Symbol	Code
⟧⟦	BK		⊡	Pbox
⊞	Bld		ℙ	Pl
⊕	BM		+	Plus
ℂ	CL		ℙ	Pp
✳	CTREE		⊡	Tbox
◉	DCirp		(WELL)	Well
❀	DTREE		W	Wl
⬠E	EDGE		WW	Ww
FC	FC		×	X
FL	FL		⊠	Xbox
⬠FL	Fljct		⊗	Xcir
(IP)	Ipcir			

Iowa NRCS - Surveying Line work for EaglePoint

Purpose	Line Name	Layer	Line Type	Masking
Banks	BK, BK1, BK2, BK3	V.Brkl.Bank	BK	
	LB, LB1, LB2, LB3	V.Brkl.Bank	BK	
	RB, RB1, RB2, RB3	V.Brkl.Bank	BK	
Bank Toe	BT	V.Brkl.Bank.Toe_	Continuous	
Centerline	CL, CL1, CL2, CL3	V.Brkl.Clin	CENTER	Exclude
Edge of Ditch	ED, ED1, ED2, ED3	V.Brkl.Ditc.Edge	Continuous	
Edge of Road	RS, RS1, RS2, RS3	V.Brkl.Road.Edge	Continuous	
Flowline	FL, FL1, FL2, FL3	V.Brkl.Flow.Line	FL	
Misc	M, M1, M2, M3	V.Brkl	Continuous	
Fence	FC, FC1, FC2, FC3	W.Plan.Fenc.Exst	FC	Exclude
	X, X1, X2, X3	W.Plan.Fenc.Exst	FC	Exclude
Structure Ridge	SR	V.Brkl.Stru.Ridg	Continuous	
Structure Toe	ST	V.Brkl.Stru.Toe_	Continuous	
Terrace Ridge	TR	V.Brkl.Terr.Ridg	Continuous	
Terrace Toe	TT	V.Brkl.Terr.Toe_	Continuous	
Waterway Flowline	WF, WF1, WF2, WF3	V.Brkl.Wway.Flow	FL	
Waterway Edge	WE	V.Brkl.Wway.Edge	Continuous	
Building	BLD, BLD1, BLD2, BLD3	W.Plan.Bldg.Exst	Continuous	
Other				
Buried Gas Line	BU	W.Plan.Util	GAS_LINE	Exclude
Power Line	PP	W.Plan.Util	Continuous	Exclude
Property Line	PL	C.Prop.Line	Continuous	Exclude
Seeding Area	Seed	C.Prop.Seed	Continuous	Exclude

Appendix X

Layer Naming Convention

The reuse of graphic information reduces drawing time and improves project coordination. The level/layer is the basic tool used in CADD for managing graphic information. The layer naming system defined here is based on conventions presented by the American Institute of Architects and the DoD Tri-Services Technology Center.

This method consists of:

1) a single character Discipline Code (e.g., "C-" for Civil Site, "W" for Civil Works, "S" for Structural, etc.),

2) a four-character Major Group (e.g., "Plan" for Plans, "Prof" for Profiles, etc.),

3) an additional four-characters for a Minor Group and

4) an additional four characters for a to further differentiate items within the Minor Group.

A period is used as a delimiter between the Group descriptors.

Discipline code
       Major Group
            Minor Group
                 Additional descriptor

X.XXXX.XXXX.XXXX
C.Topo.Ognd.Indx
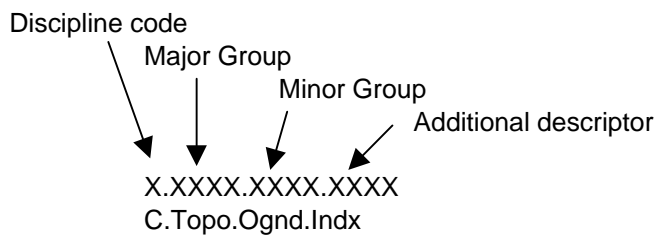
This example has:

        C = Civil Site
        Topo = Topography
        Ognd = Original Ground Surface
        Indx = Index Contours

This method allows grouping of similar items together. It allows for filtering of layer names in the layer manager in order to display customized lists of layers.

Layer Naming - Explaination of Abbreviations

Layer Name Position	Abbreviation	Explanation
Separate	O	AutoCAD's default layer
Separate	Defpoints	AutoCAD's default non-plotting layer
1st	1	Model space layers
	2	Paper space layers
	3	Grid layers
	4	Title Blocks/Borders
	B	Soil Boring/Getoechnical Info
	C	Civil Site earthwork information such as contours and land forms
	S	Structure (Structural Concrete & Steel)
	V	Survey and mapping information such as field codes and breaklines
	W	Civil Works information such as pipes, drains, rock, utilities, fences
2nd	Blks	Symbols and blocks
	Bndr	Boundaries
	Brkl	Breaklines
	Clin	Centerlines
	Ctrl	Horizontal or vertical control
	Dims	Dimensions
	Doqs	Frames for DOQs and other image files
	Drgs	Frames for Digital Raster Graphics (USGS maps, etc)
	Erro	Error markers (created by Eagle Point,etc)
	Fcod	Field Code - EP Data Collection
	Grph	Graphs - EP Watershed Modeling hydrologic graphs and charts
	Grid	Gridlines and grid borders
	Htch	Hatch patterns and hatch boundaries. (Hatch boundaries are normally not plotted.)
	Misc	Miscellaneous or un-categorized objects
	Mtch	Match lines and match line information
	Plan	Plan view objects
	Poin	Points
	Prof	Profiles and cross sections
	Prop	Property limits such as property lines, seeding and clearing and grubbing areas, and work limits
	Soil	Soil and geotechnical information such as soil boring locations and profiles
	Surf	Surface information
	Tabl	Tables and related information
	Tblk	Title block items
	Temp	Temporary objects that will be moved to other layers or deleted
	Text	Text
	Topo	Topographic surface modeling information such as contours, catch lines, feature lines and slope lines
	Void	Void regions
	Vprt	Viewports. (This layer is normally not plotted)
3rd	Actu	Actual surface model
	Alin	Alignment objects. (Normally contains the centerline alignment of a project.)
	Area	Areas to delineate limits
	Auxs	Auxiliary spillway
	Bank	Bank lines
	Bldg	Buildings
	Bore	Soil boring & geotechnical
	Borr	Borrow area surface model
	Brdr	Borders
	Clin	Centerlines
	Clvt	Culvert
	Clxs	Centerline Cross Section
	Conc	Concrete

Layer Name Position	Abbreviation	Explaination
	Cord	Coordinate grid surface
	Cort	Core trench
	Cut_	Cut portions of surface model comparisons
	Dem_	Digital elevation models
	Demo	Items to be demolished
	Depr	Depressions in a surface model
	Digi	Digitized surface model objects
	Ditc	Ditch
	Drai	Drains
	Edge	Edge of
	Embk	Embankment
	Exca	Excavation
	Fenc	Fence
	Fill	Fill portions of surface models
	Fine	Fine grid lines
	Fini	Finished surface models
	Flow	Flowlines
	Genl	General (Some EP surface model objects are placed here and should be moved to layers named appropriate to the surface being created.)
	Geot	Geotextile
	Grid	Grid of a topographic surface
	Grub	Grubbing area
	Hevy	Heavy grid lines
3rd	Htch	Hatch patterns and boundaries.
	Impt	Importing points
	Join	Joining contours
	Land	Land use objects.
	Line	Line type objects.
	Lots	Lots
	Lttr	Lettering style text
	Merg	Merged Surface models
	Misc	Miscellenous objects
	Note	Notes and dimension style text
	Objc	Object (e.g. EP Profiles created from objects)
	Og##	Original ground surface model at a user defined scale (User should replace #s with scale of surface model.)
	Ognd	Original Ground Survey & surface model
	Outc	Outlet channel surface model
	Ovlp	Overlap markers in EP Watershed Modeling
	Pipe	Pipe
	Poin	Points
	Pool	Pool area delineation
	Prop	Property Line
	Rblk	Revision block objects
	Rlrd	Railroad
	Road	Roads
	S&E_	Stations and elevations style text
	Scco	Stream Channel Clean Out surface model
	Scpt	Survey Control points
	Seed	for seeding area delineation
	Slop	Slopes of surface models
	Smdl	Surface model (e.g. EP Profiles created from surface models)
	Soil	Soil boring & geotechnical
	Stex	Structure excavation surface model
	Strp	Stripping surface model

Layer Name Position	Abbreviation	Explaination
3rd	Stru	Structure
	Subb	Sub-basin delineation (EP Watershed Modeling)
	Tang	Tangents & Vertical Curves (EP)
	Terr	Terrace
	Tick	Tick marks (Tick marks indicate where to cut sheets from roll paper.)
	Tile	Tile
	Topo	Field code attribute style of Topography
	Trav	Traverse survey
	Trsh	Trash rack
	Trsh	Trash rack
	Util	Field code attribute style or Utility objects (i.e. gas, electric, water, etc.)
	Vege	Vegetation
	Wlin	Water line delineation
	Work	Work limit delineation
	Wway	Waterway
4th	Anot	Annotation (labelling of contours, etc)
	Arro	Arrows
	Conc	Concrete
	Cord	Coordinates (Northing, Easting)
	Ctch	Catch lines
	Desc	Description of survey shot
	Dpth	Depth
	Drai	Drains
	Edge	Edges (of waterways, road, etc)
	Elev	Elevation
	Exst	Existing
	Feat	Feature lines
	Flod	Flooded pool delineation
	Flow	Flowlines
	Grid	Grid of a topographic surface
	Hach	Slope hachures
	Htch	Hatch patterns
	Indx	Index contours
	Intr	Intermediate contours
	Line	Lines
	Logo	NRCS logo
	Mark	Tick marks
	New_	Planned or new objects
	Nmbr	Point Number
	Norm	Normal pool delineation
	Pipe	Pipe
	Rack	Trash rack
	Ridge	Ridge
	Slop	Slope lines projected to
	Ston	Stone hatch patterns (riprap)
	Text	Text
	Tin_	Triangulated irregular network
	Toe_	Structure/terrace toe lines
	Trks	Railroad tracks
	U###	User defined contours. (The user should replace the #s with numbers to indicate the elevation)

Layer Naming Convention

Column Group 1

1st Position	2nd Position	3rd Position	4th Position	
0				
1 (Model)	Blks			@
	Bndr			@
	Clin			
	Dims			
	Dogs			
	Drgs			
	Grph			@
	Htch	Brdr		
	Mtch	Line		
	Tabl			@
	Temp			
	Text	Lttr		@
	Text	Note		@
	Text	S&E_		@
2 (Layout)	Blks			@
	Dims			
	Text	Lttr		
	Text	Note		@
	Text	S&E_		@
	Vprt			
3 (Grids)	Grid	Brdr		@
	Grid	Cord		@
	Grid	Fine		@
	Grid	Hevy		@
4 (Title Block)	Tblk	Brdr	Line	
	Tblk	Rblk	Brdr	
	Tblk	Rblk	Htch	
	Tblk	Rblk	Text	
	Tblk	Logo		
	Tblk	Text		
	Tblk	Tick	Mark	
B	Soil	Bore		@
C (Civil Site)	Clin	Auxs	Exst	
	Clin	Auxs	New_	
	Clin	Embk	Exst	
	Clin	Embk	New_	@
	Clin	Outc	Exst	
	Clin	Outc	New_	
	Clin	Road	Exst	
	Clin	Road	New_	
	Clin	Wway	Exst	
	Clin	Wway	New_	
	Misc	Depr		@
	Misc	Flow		@
	Misc	Land		@
	Misc	Ovlp		@
	Misc	Subb		@
	Plan	Alin		@
	Plan	Embk		@
	Plan	Exca		
	Plan	Flow	Hach	@
	Plan	Pool	Flod	
	Plan	Pool	Norm	
	Plan	Tree	Line	@
	Prof	Auxs		
	Prof	Bank		
	Prof	Borr		
	Prof	Clxs		@
	Prof	Cort		
	Prof	Embk		@
	Prof	Exca		
	Prof	Fini		
	Prof	Flow		
	Prof	Impt		@
	Prof	Objc		@
	Prof	Ognd		@
	Prof	Road		@
	Prof	Scco		
	Prof	Smdl		@
	Prof	Stex		
	Prof	Strp		@
	Prof	Tang		@
	Prop	Grub		
	Prop	Line		@
	Prop	Seed		@
	Prop	Work		
	Surf	Actu		@
	Surf	Embk		@
	Surf	Ognd		
	Topo	Cord	Grid	@
	Topo	Cut_	Dpth	@
	Topo	Cut_	Indx	@
	Topo	Cut_	Intr	@
	Topo	Digi	Indx	@
	Topo	Digi	Intr	@
	Topo	Fill	Dpth	@
	Topo	Fill	Indx	@
	Topo	Fill	Intr	@
	Topo	Grid		@
	Topo	Join		@
	Topo	Og##	Anot	@
	Topo	Og##	Indx	@
	Topo	Og##	Intr	@
	Topo	Og##	U###	@
	Topo	Slop	Arro	@
	Topo	Slop	Indx	@
	Topo	Slop	Intr	@
	Topo	Slop	Tin_	@
	Topo	Slop	U###	@

Column Group 2 (Surface Model Libraries)

1st Position	2nd Position	3rd Position	4th Position	
C (Civil Site)	Topo (Surface Model Libraries)	Auxs	Anot	@
			Ctch	
			Elev	@
			Feat	
			Grid	@
			Indx	@
			Intr	@
			Slop	
			Tin_	@
			U###	@
		Borr	Anot	@
			Ctch	
			Elev	@
			Feat	
			Grid	@
			Indx	@
			Intr	
			Slop	
			Tin_	
			U###	@
		Cort	Anot	@
			Ctch	
			Elev	@
			Feat	
			Grid	@
			Indx	@
			Intr	@
			Slop	
			Tin_	
			U###	@
		Dem_	Anot	@
			Elev	@
			Grid	
			Indx	@
			Intr	
			Tin_	@
			U###	@
		Embk	Anot	@
			Ctch	
			Elev	@
			Feat	
			Grid	@
			Indx	@
			Intr	
			Slop	
			Tin_	@
			U###	@
		Fini	Anot	@
			Ctch	
			Elev	@
			Feat	
			Grid	@
			Indx	@
			Intr	@
			Slop	
			Tin_	@
			U###	@
		Genl	Anot	@
			Ctch	
			Elev	@
			Feat	@
			Grid	@
			Indx	@
			Intr	@
			Slop	@
			Tin_	@
			U###	@
		Merg	Anot	@
			Ctch	
			Elev	@
			Feat	
			Grid	@
			Indx	@
			Intr	
			Slop	
			Tin_	@
			U###	@
		Ognd	Anot	@
			Elev	@
			Grid	@
			Indx	@
			Intr	@
			Tin_	@
			U###	@
		Scco	Anot	@
			Ctch	
			Elev	@
			Feat	
			Grid	@
			Indx	@
			Intr	
			Slop	
			Tin_	@
			U###	@

Column Group 3

1st Position	2nd Position	3rd Position	4th Position	
C (Civil Site)	Topo (Surface Model Libraries)	Stex	Anot	
			Ctch	
			Elev	@
			Feat	
			Grid	@
			Indx	@
			Intr	@
			Slop	
			Tin_	@
			U###	@
		Strp	Anot	@
			Elev	@
			Grid	@
			Indx	@
			Intr	
			Tin_	@
			U###	@
Defpoints				
V (Survey)	Brkl	Bank	Toe_	@
				@
		Clin		@
		Ditc	Edge	@
		Flow	Line	@
		Road	Edge	@
		Stru		
		Terr	Ridg	
			Toe_	
		Wlin	Edge	
		Wway	Edge	@
			Flow	
	Ctrl	Poin		@
	Erro			@
	Fcod	Area		@
		Bank		@
		Clin		@
		Edge		@
		Fenc		@
		Flow		@
		Misc		@
		Ognd		@
		Prop		@
		Scpt		@
		Soil		@
		Stru		@
		Terr		@
		Util		@
		Vege		@
		Wlin		@
		Wway		@
	Poin	Scpt	Cord	@
			Desc	@
			Elev	@
			Nmbr	@
		Topo	Desc	@
			Elev	@
			Nmbr	@
		Util	Desc	@
			Elev	@
			Nmbr	@
	Prop	Alin		@
		Lots		@
		Trav		@
	Void			@
W (Civil Works)	Plan	Bldg	Exst	@
			New_	
		Clin	Drai	
			Pipe	
		Clvt	Exst	
			New_	
		Conc	Exst	
			New_	
		Demo		
		Drai		
		Fenc	Exst	@
			New_	
		Htch	Conc	
			Ston	
		Rlrd	Trks	
		Tile	Exst	
			New_	
		Trsh	Rack	
		Util		@
	Prof	Conc		@
		Drai		
		Geot		
		Htch	Conc	
			Ston	
		Pipe		@
		Tile		
		Trsh	Rack	

"@" Denotes layers where EaglePoint automatically places CADD objects when the NRCS prototype and Field Code library is utilized.

Layer Naming - List of Layer Names w/ Explanation

Layer name	Explanation
0	Default Layer
1.Blks	Symbols, Blocks in Model Space
1.Bndr	Boundaries, EP boundaries used for Surface Modelling limits
1.Clin	Centerline (undefined)
1.Dims	Dimensions placed in Model Space
1.Doqs	DOQ Frames (space holders for Digital Ortho Quads)
1.Drgs	DRG Frames (space holders for Digital Raster Graphics)
1.Grph	Graphs, EP graphs created by Watershed Modelling
1.Htch.Brdr	Hatch Border
1.Mtch.Line	Match Lines
1.Tabl	Tables created by EP, Alignment, Coordinate, etc
1.Temp	Temporary Drafting Items
1.Text.Lttr	Lettering type of text in Model Space
1.Text.Note	Notes type of text in Model Space
1.Text.S&E_	Station/Elevation type of text in Model Space
2.Blks	North Arrow, Scales, Symbols, Blocks in Paper Space
2.Dims	Dimensions placed in Paper Space
2.Text.Lttr	Lettering placed in Paper Space
2.Text.Note	Notes placed in Paper Space
2.Text.S&E_	Stations/Elevations placed in Paper Space
2.Vprt	Viewports
3.Grid.Brdr	Grid Border
3.Grid.Cord	Grid
3.Grid.Fine	Fine Grid Lines
3.Grid.Hevy	Heavy Grid Lines
4.Tblk.Brdr.Line	Title Block Border
4.Tblk.Logo	Title Block Logo
4.Tblk.Rblk.Brdr	Revision Block Borders
4.Tblk.Rblk.Htch	Revision Block Hatch
4.Tblk.Rblk.Text	Revision Block Text
4.Tblk.Text	Title Block - Static Text
4.Tblk.Tick.Mark	Tick Marks (indicate the edge of a sheet - cut mark)
B.Soil.Bore	Soil Test Borings
C.Clin.Auxs.Exst	Centerline of Existing Auxiliary Spillway
C.Clin.Auxs.New_	Centerline of Auxiliary Spillway
C.Clin.Embk.Exst	Centerline of Existing Embankment
C.Clin.Embk.New_	Centerline of Embankment to be constructed
C.Clin.Outc.Exst	Centerline of Existing Outlet Channel
C.Clin.Outc.New_	Centerline of Outlet Channel to be constructed
C.Clin.Road.Exst	Centerline of Existing Road
C.Clin.Road.New_	Centerline of Road to be constructed
C.Clin.Wway.Exst	Centerline of Existing Waterway
C.Clin.Wway.New_	Centerline of Waterway to be constructed
C.Misc.Depr	Watershed Depression Areas
C.Misc.Flow	Flow Hachures
C.Misc.Land	Land Use
C.Misc.Ovlp	Overlap of Watershed Boundaries
C.Misc.Subb	Watershed Sub-Basin
C.Plan.Alin	Additional Alignments

Layer name	Explanation
C.Plan.Embk	Embankment Outline in Plan View
C.Plan.Exca	Excavation Outline in Plan View
C.Plan.Flow.Hach	Flow Hachures
C.Plan.Pool.Flod	Flooded Pool
C.Plan.Pool.Norm	Normal Pool
C.Plan.Tree.Line	Treeline
C.Prof.Auxs	Auxiliary Spillway Profile
C.Prof.Bank	Banks Profile
C.Prof.Borr	Borrow in Profile Section
C.Prof.Clxs	Centerline in Profile Section
C.Prof.Cort	Core Trench Profile
C.Prof.Embk	Additional Profile (Design)
C.Prof.Exca	Excavation Outline in Profile Section
C.Prof.Fini	Finished Grade
C.Prof.Flow	Flowline Profile
C.Prof.Impt	Import Profile
C.Prof.Objc	Profile From Object
C.Prof.Ognd	Original Ground Profile
C.Prof.Road	Road Profiles
C.Prof.Scco	Stream Channel Cleanout Profile
C.Prof.Smdl	Profile From Surface Model
C.Prof.Stex	Structure Excavation Profile
C.Prof.Strp	Profile - Stripping (EP)
C.Prof.Tang	Tangents & Vertical curves (EP Profile)
C.Prop.Grub	Clearing and Grubbing
C.Prop.Line	Property Lines - Existing
C.Prop.Seed	Seeding and Mulching
C.Prop.Work	Work Limits
C.Surf.Actu	Additional Surface (Actual)
C.Surf.Embk	Additional Surface (Design)
C.Surf.Ognd	Additional Surface (Original)
C.Topo.Auxs.Anot	Labeling of Contours for Auxiliary Spillway
C.Topo.Auxs.Ctch	Auxiliary Spillway Catch Lines
C.Topo.Auxs.Elev	Spot & Grid Elevations for Auxiliary Spillway
C.Topo.Auxs.Feat	Auxiliary Spillway Feature Lines
C.Topo.Auxs.Grid	Surface Grid for Auxiliary Spillway
C.Topo.Auxs.Indx	Auxiliary Spillway Index Contours
C.Topo.Auxs.Intr	Auxiliary Spillway Intermediate Contours
C.Topo.Auxs.Slop	Auxiliary Spillway Slope Lines
C.Topo.Auxs.Tin_	Triangulation for Auxiliary Spillway
C.Topo.Auxs.U###	Auxiliary Spillway User Defined Contours (U### = Elevation)
C.Topo.Borr.Anot	Labeling of Contours for Borrow Area
C.Topo.Borr.Ctch	Borrow Area Catch Lines
C.Topo.Borr.Elev	Spot & Grid Elevations for Borrow Area
C.Topo.Borr.Feat	Borrow Area Feature Lines
C.Topo.Borr.Grid	Surface Grid for Borrow Area
C.Topo.Borr.Indx	Borrow Area Index Contours
C.Topo.Borr.Intr	Borrow Area Intermediate Contours
C.Topo.Borr.Slop	Borrow Area Slope Lines
C.Topo.Borr.Tin_	Triangulation for Borrow Area
C.Topo.Borr.U###	Borrow Area User Defined Contours (U### = Elevation)

Layer name	Explanation
C.Topo.Cord.Grid	Coordinate Grid
C.Topo.Cort.Anot	Labeling of Contours for Core Trench
C.Topo.Cort.Ctch	Core Trench Catch Lines
C.Topo.Cort.Elev	Spot & Grid Elevations for Core Trench
C.Topo.Cort.Feat	Core Trench Feature Lines
C.Topo.Cort.Grid	Surface Grid for Core Trench
C.Topo.Cort.Indx	Core Trench Index Contours
C.Topo.Cort.Intr	Core Trench Intermediate Contours
C.Topo.Cort.Slop	Core Trench Slope Lines
C.Topo.Cort.Tin_	Triangulation for Core Trench
C.Topo.Cort.U###	Core Trench User Defined Contours (U### = Elevation)
C.Topo.Cut_.Dpth	User Defined Cut Depth Contours
C.Topo.Cut_.Indx	Index Cut Depth Contours
C.Topo.Cut_.Intr	Intermediate Cut Depth Contours
C.Topo.Dem_.Anot	Labeling of Contours for Digital Elevation Model
C.Topo.Dem_.Elev	Spot & Grid Elevations for Digital Elevation Model
C.Topo.Dem_.Grid	Surface Grid for Digital Elevation Model
C.Topo.Dem_.Indx	Digital Elevation Model Index Contours
C.Topo.Dem_.Intr	Digital Elevation Model Intermediate Contours
C.Topo.Dem_.Tin_	Triangulation for Digital Elevation Model
C.Topo.Dem_.U###	Digital Elevation Model User Defined Contours (U### = Elevation)
C.Topo.Digi.Indx	Index Digitized Contours
C.Topo.Digi.Intr	Intermediate Digitized Contours
C.Topo.Embk.Anot	Labeling of Contours for Embankment
C.Topo.Embk.Ctch	Embankment Catch Lines
C.Topo.Embk.Elev	Spot & Grid Elevations for Embankment
C.Topo.Embk.Feat	Embankment Feature Lines
C.Topo.Embk.Grid	Surface Grid for Embankment
C.Topo.Embk.Indx	Embankment Index Contours
C.Topo.Embk.Intr	Embankment Intermediate Contours
C.Topo.Embk.Slop	Embankment Slope Lines
C.Topo.Embk.Tin_	Triangulation for Embankment
C.Topo.Embk.U###	Embankment User Defined Contours (U### = Elevation)
C.Topo.Fill.Dpth	User Defined Fill Depth Contours
C.Topo.Fill.Indx	Index Fill Depth Contours
C.Topo.Fill.Intr	Intermediate Fill Depth Contours
C.Topo.Fini.Anot	Labeling of Contours for Finished Surface
C.Topo.Fini.Ctch	Finished Grade Catch Lines
C.Topo.Fini.Elev	Spot & Grid Elevations for Finished Surface
C.Topo.Fini.Feat	Finished Grade Feature Lines
C.Topo.Fini.Grid	Surface Grid for Finished Surface
C.Topo.Fini.Indx	Finished Grade Index Contours
C.Topo.Fini.Intr	Finished Grade Intermediate Contours
C.Topo.Fini.Slop	Finished Grade Slope Lines
C.Topo.Fini.Tin_	Triangulation for Finished Surface
C.Topo.Fini.U###	Finished Grade User Defined Contours (U### = Elevation)
C.Topo.Genl.Anot	Labeling of Contours - General
C.Topo.Genl.Ctch	Slope Projection Catchline
C.Topo.Genl.Elev	Spot & Grid Elevations - General
C.Topo.Genl.Feat	Feature lines, EP 3D offsets
C.Topo.Genl.Grid	Surface Grid - General

Layer name	Explanation
C.Topo.Genl.Indx	Index Contours
C.Topo.Genl.Intr	Intermediate Contours
C.Topo.Genl.Slop	Slope Projection Lines Cut & Fill lines
C.Topo.Genl.Tin_	Triangulation - General
C.Topo.Genl.U###	User Defined Contours
C.Topo.Grid	Rectangular Grid
C.Topo.Join	Join Contours
C.Topo.Merg.Anot	Labeling of Contours for Merged Surfaces
C.Topo.Merg.Ctch	Merged Surfaces Catch Lines
C.Topo.Merg.Elev	Spot & Grid Elevations for Merged Surfaces
C.Topo.Merg.Feat	Merged Surfaces Feature Lines
C.Topo.Merg.Grid	Surface Grid for Merged Surfaces
C.Topo.Merg.Indx	Merged Surfaces Index Contours
C.Topo.Merg.Intr	Merged Surfaces Intermediate Contours
C.Topo.Merg.Slop	Merged Surfaces Slope Lines
C.Topo.Merg.Tin_	Triangulation for Merged Surfaces
C.Topo.Merg.U###	Merged Surfaces User Defined Contours (U### = Elevation)
C.Topo.Og##.Anot	Original Ground User Defined Scale Annotation
C.Topo.Og##.Indx	Original Ground User Defined Scale Index Contours
C.Topo.Og##.Intr	Original Ground User Defined Scale Intermediate Contours
C.Topo.Og##.U###	Original Ground User Defined Scale User Defined Contours (U### = Elevation)
C.Topo.Ognd.Anot	Original Ground Annotation
C.Topo.Ognd.Elev	Spot & Grid Elevations for Original Ground
C.Topo.Ognd.Grid	Surface Grid for Orginal Ground
C.Topo.Ognd.Indx	Original Ground Index Contours
C.Topo.Ognd.Intr	Original Ground Intermediate Contours
C.Topo.Ognd.Tin_	Triangulation for Orignal Ground
C.Topo.Ognd.U###	Original Ground User Defined Contours (U### = Elevation)
C.Topo.Scco.Anot	Labeling of Contours for Stream Channel Cleanout
C.Topo.Scco.Ctch	Stream Channel Cleanout Catch Lines
C.Topo.Scco.Elev	Spot & Grid Elevations for Stream Channel Cleanout
C.Topo.Scco.Feat	Stream Channel Cleanout Feature Lines
C.Topo.Scco.Grid	Surface Grid for Stream Channel Cleanout
C.Topo.Scco.Indx	Stream Channel Cleanout Index Contours
C.Topo.Scco.Intr	Stream Channel Cleanout Intermediate Contours
C.Topo.Scco.Slop	Stream Channel Cleanout Slope Lines
C.Topo.Scco.Tin_	Triangulation for Stream Channel Cleanout
C.Topo.Scco.U###	Stream Channel Cleanout User Defined Contours (U### = Elevation)
C.Topo.Slop.Arro	Slope Analysis Slope Arrows
C.Topo.Slop.Indx	Slope Analysis Index Slope Contours
C.Topo.Slop.Intr	Slope Analysis Index Slope Contours
C.Topo.Slop.Tin_	Slope Analysis Triangles
C.Topo.Slop.U###	Slope Analysis User Defined Slope Contours (S### = Elevation)
C.Topo.Stex.Anot	Labeling of Contours for Sturcture Excavation
C.Topo.Stex.Ctch	Structure Excavation Catch Lines
C.Topo.Stex.Elev	Spot & Grid Elevations for Sturcture Excavation
C.Topo.Stex.Feat	Structure Excavation Feature Lines
C.Topo.Stex.Grid	Surface Grid for Sturcture Excavation
C.Topo.Stex.Indx	Structure Excavation Index Contours
C.Topo.Stex.Intr	Structure Excavation Intermediate Contours
C.Topo.Stex.Slop	Structure Excavation Slope Lines

Layer name	Explanation
C.Topo.Stex.Tin_	Triangulation for Sturcture Excavation
C.Topo.Stex.U###	Structure Excavation User Defined Contours (U### = Elevation)
C.Topo.Strp.Anot	Labeling of Contours for Stripping
C.Topo.Strp.Elev	Spot & Grid Elevations for Stripping
C.Topo.Strp.Grid	Surface Grid for Stripping
C.Topo.Strp.Indx	Stripping Index Contours
C.Topo.Strp.Intr	Stripping Intermediate Contours
C.Topo.Strp.Tin_	Triangulation for Stripping
C.Topo.Strp.U###	Stripping User Defined Contours (U### = Elevation)
Defpoints	Definition Points of Dimensions Created by AutoCAD
V.Brkl	Breaklines
V.Brkl.Bank	Banks in Plan View
V.Brkl.Bank.Toe_	Bank Toe
V.Brkl.Clin	Centerline of Alignment
V.Brkl.Ditc.Edge	Edge of Ditch
V.Brkl.Flow.Line	Flowlines
V.Brkl.Road.Edge	Edge of Road
V.Brkl.Stru	Structure Ridge or Toe
V.Brkl.Terr.Ridg	Terrace Ridge
V.Brkl.Terr.Toe_	Terrace Toe
V.Brkl.Wlin.Edge	Water Line Edge
V.Brkl.Wway.Edge	Waterway Edge
V.Brkl.Wway.Flow	Waterway Flowline
V.Ctrl.Poin	Horizontal and Vertical Control Points
V.Erro	Survey Error Ellipses
V.Fcod.Area	Field Code nodes- Areas to delineate
V.Fcod.Bank	Field Code nodes- Bank
V.Fcod.Clin	Field Code nodes - Centerline
V.Fcod.Edge	Field Code nodes - Edges
V.Fcod.Fenc	Field Code nodes - Fences
V.Fcod.Flow	Field Code nodes - Flowlines
V.Fcod.Misc	Field Code nodes - Miscellaneous
V.Fcod.Ognd	Field Code nodes- Original Ground
V.Fcod.Prop	Field Code nodes - Property Lines
V.Fcod.Scpt	Field Code nodes - Survey Control Points
V.Fcod.Soil	Field Code nodes- Soil Boring
V.Fcod.Stru	Field Code nodes - Structures
V.Fcod.Terr	Field Code nodes - Terraces
V.Fcod.Util	Field Code nodes - Utilities
V.Fcod.Vege	Field Code nodes- Vegetation
V.Fcod.Wlin	Field Code nodes - Water Lines
V.Fcod.Wway	Field Code nodes - Waterways
V.Poin	Import Points
V.Poin.Scpt.Cord	Survey Control Point Coordinate
V.Poin.Scpt.Desc	Survey Control Point Description
V.Poin.Scpt.Elev	Survey Control Point Elevation
V.Poin.Scpt.Nmbr	Survey Control Point Point Number
V.Poin.Topo.Desc	Topo Point Description
V.Poin.Topo.Elev	Topo Point Elevation
V.Poin.Topo.Nmbr	Topo Point Number
V.Poin.Util.Desc	Utility Point Description

Layer name	Explanation
V.Poin.Util.Elev	Utility Point Elevation
V.Poin.Util.Nmbr	Utility Point Number
V.Prop.Alin	Alignments
V.Prop.Lots	Lots
V.Prop.Trav	Traverse
V.Void	Place Void Regions
W.Plan.Bldg.Exst	Existing Building Outlines
W.Plan.Bldg.New_	New Building Outlines
W.Plan.Clin.Drai	Center Line of Drains in Plan View
W.Plan.Clin.Pipe	Centerline of Pipe
W.Plan.Clvt.Exst	Road Culverts Existing
W.Plan.Clvt.New_	Road Culverts to be Installed
W.Plan.Conc.Exst	Concrete Existing
W.Plan.Conc.New_	Concrete to be Installed
W.Plan.Demo	Objects to be demolished
W.Plan.Drai	Drains
W.Plan.Fenc.Exst	Existing Fence
W.Plan.Fenc.New_	New fence to be installed
W.Plan.Htch.Conc	Concrete Hatch in a Plan View
W.Plan.Htch.Ston	Stone Hatch in a Plan View
W.Plan.Rlrd.Trks	Rail Road Tracks
W.Plan.Tile.Exst	Centerline of Existing Tile
W.Plan.Tile.New_	Centerline of Tile to be installed
W.Plan.Trsh.Rack	Trash Rack in Plan View
W.Plan.Util	Buried Electrical Line, Gas line, Telephone, Waterline, Powerpoles
W.Prof.Conc	Concrete in a Profile, Wingwalls, Headwalls, etc
W.Prof.Drai	Drain Profiles
W.Prof.Geot	Geotextile in a Profile View
W.Prof.Htch.Conc	Profile Hatch For Concrete
W.Prof.Htch.Ston	Profile Hatch For Stone
W.Prof.Pipe	Pipe Profile, Inlets, Manholes, Ends
W.Prof.Tile	Profile of Tile
W.Prof.Trsh.Rack	Trash Rack in Prof View

Appendix XI – Sample Plans

(Reserved for future development)